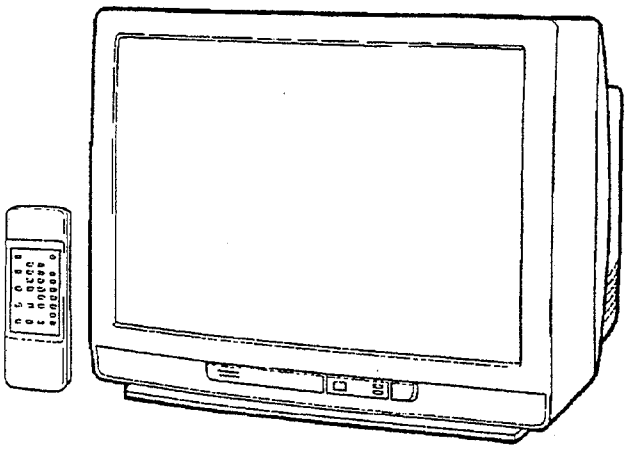
JVC

SERVICE MANUAL

COLOUR TELEVISION

AV-25MEX
AV-25MEX(-A)

BASIC CHASSIS
MZ^2



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SPECIFICATIONS

Item	Content
Dimensions	57.1cm(W)×51.5cm(H)×49.5cm(D)
Mass	27.5kg
TV RF System	B, G, I, D, K, K1, M
Colour System	PAL/SECAM/NTSC
Receiving Frequency	
VHF low band (VL)	46.25MHz～168.25MHz
VHF high band (VH)	175.25MHz～463.25MHz
UHF band (U)	471.25MHz～863.25MHz
Cable TV	Mid (X-Z, S1-S10) Super (S11-S20) and Hyper (S21-S41) bands can be received.
Intermediate Frequency	
VIF Carrier	38.0MHz
SIF Carrier	32.5MHz (5.5MHz), 31.5MHz(6.5MHz) 32.0MHz (6.0MHz), 33.5MHz(4.5MHz)
Colour Sub Carrier	PAL : 4.43MHz SECAM : 4.40625MHz, 4.25MHz NTSC : 3.58MHz, 4.43MHz
Antenna Input Impedance	75Ω unbalanced, Aerial-type
Power Input	
Rated Voltage	120V to 240V AC, 50Hz / 60Hz
Operating Voltage	90V to 260V AC, 50Hz / 60Hz
Power Consumption	118W (Max.), 90W (Avg.)
Picture Tube	25" (Tube size : 63.4cm, Visible size : 59cm), measured diagonally
Viewable Picture Size	48.9cm (W)×37.3cm (H)
High Voltage	28kV ±1kV (at zero beam current)
Speaker	5×12cm oval×2
Audio Power Output	MUSIC Power : 5.8W+5.8W Effective : 2.5W+2.5W (In TV mode : monaural) (In VIDEO mode : Stereo playback possible for external stereo signal input)
Video Input	1Vp-p, 75Ω, RCA pin jack
Video Output	1Vp-p, 75Ω, RCA pin jack
Audio Input	500mVrms (-4dBs), high impedance, RCA pin jack
Audio Output	390mVrms (-4dBs), Low impedance, RCA pin jack
Remote control unit	RM-C461-1H (Battery size ; AA/R6/UM-3 dry battery ×2)

Design & specifications subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠)on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED(NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⏚) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B_1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

• Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

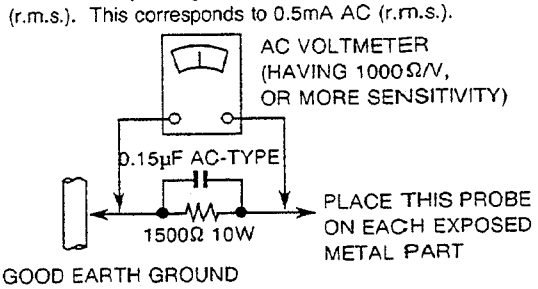
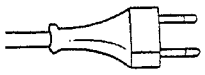
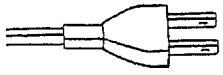


Fig.A

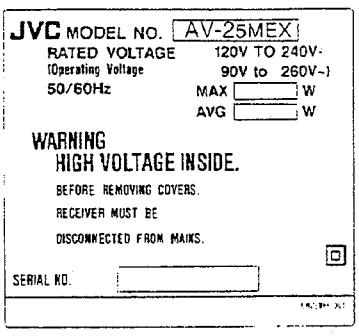
FEATURES

- New chassis design enables use of an interactive on-screen control.
- Wide range voltage (90V~240V) AC power input.
- With AUDIO.VIEDO INPUT & OUTPUT terminals.
- "Mute Button" can reduce the audio level to zero instantly.
- Functional remote control to operate TV set (for channel selection, volume control, power ON/OFF, etc.) from a distance.
- I²C bus control utilizes single chip IC for IF, VIDEO, CHROMA & DEF.

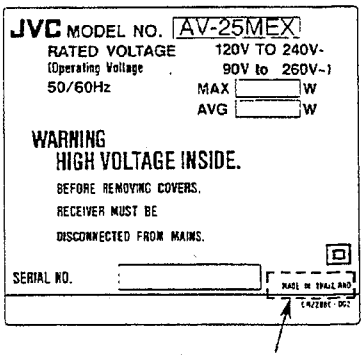
DIFFERENCE LIST BETWEEN AV-25MEX AND AV-25MEX(-A) MODELS

⚠	Ref. No.	PARTS No. AV-25MEX	PARTS No. AV-25MEX(-A)	PARTS NAME	Description
	10	———	CEMK002-001	ADAPTOR PLUG	PACKING PART LIST
⚠	9	QMP73G0-200J5 	QMP73P0-200J5 	POWER CORD	
⚠	24	CM22925-001	CM22880-002	RATING LABEL	

(AV-25MEX RATING LABEL)



(AV-25MEX(-A) RATING LABEL)



This sentence is printed for AV-25MEX(-A).

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power cord.
2. Remove the ten screws marked Ⓐ as shown in Fig. 1.

- When reinstalling the rear cover, carefully push it inward after inserting the MAIN PW board into the rear cover groove.

REMOVING THE MAIN PW BOARD AND AV BOARD

- After removing the rear cover.

1. Draw the MAIN PW board backward along the rail in the arrow direction as shown in Fig. 2.
   (Take off the wire clamp, connectors, etc. as required.)
2. Remove the two screw marked Ⓑ as shown in Fig.1.
3. Remove the claws marked Ⓐ by widening slightly in the direction of arrow as shown in Fig.3.
4. Remove the AV BOARD in the direction of arrow marked Ⓑ as shown in Fig.3.

SETTING UP THE CHASSIS FOR CHECK / REPAIR

- As shown in Fig. 4, set the removed chassis upright.
  When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT SOCKET PW board and the MAIN PW board.

WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

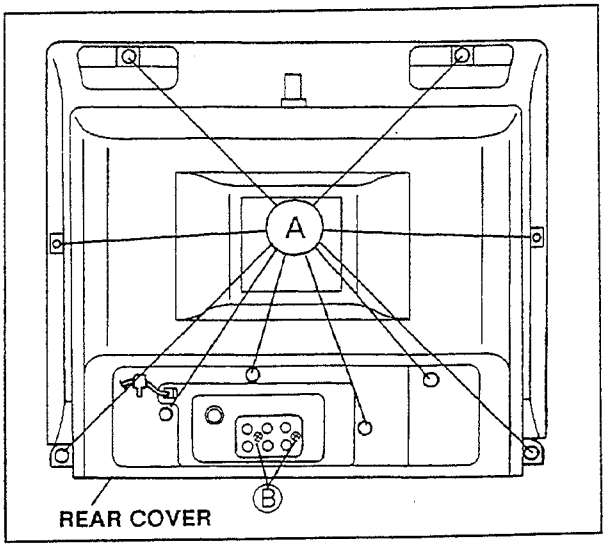


Fig. 1

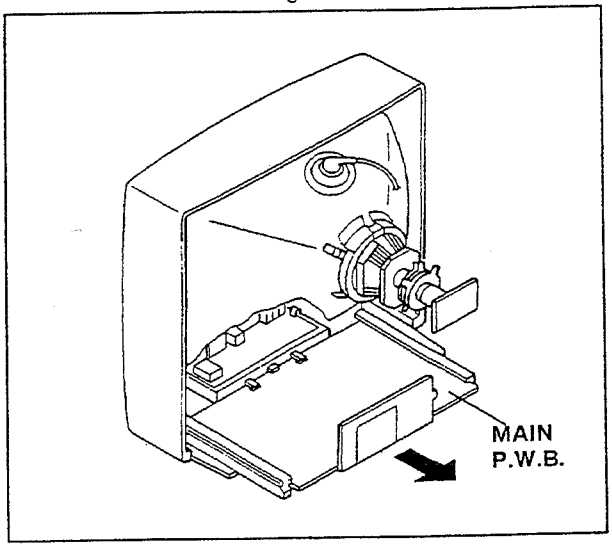


Fig. 2

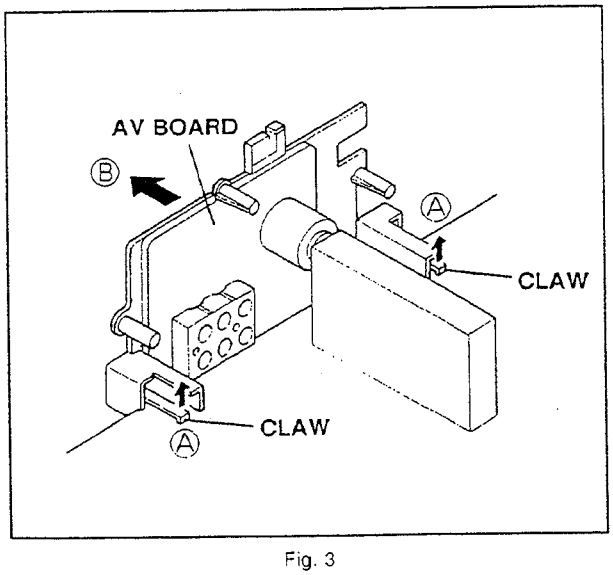


Fig. 3

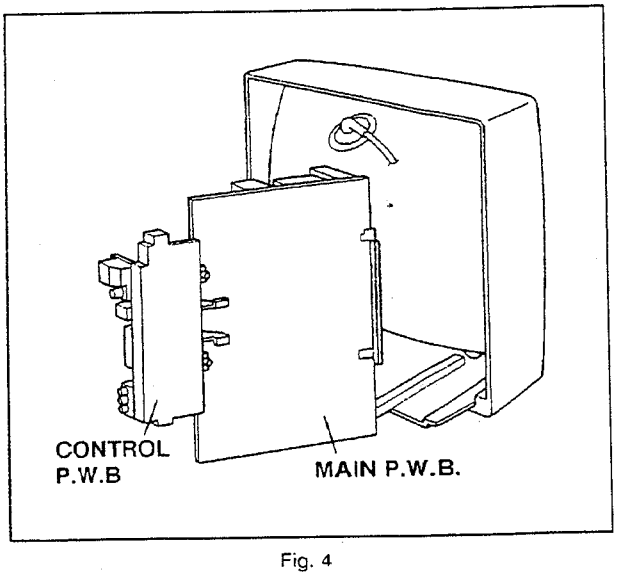


Fig. 4

MEMORY IC REPLACEMENT

1. Memory IC

This model uses a non-volatile memory (EEPROM) IC.

The memory IC stores data for proper operation of the video and deflection circuits.

When replacing it, be sure to use a memory IC containing the initial values (not blank one).

2. Memory IC replacement procedure

Procedure	Screen display
(1) **Switch off the power and disconnect the power cord from the outlet.**	
(2) **Replacing the memory IC** Replace with the new memory IC containing the initial values.	
(3) **Power on** Connect the power cord to the outlet and switch on the power.	
(4) **System constant check and setting** 1) Simultaneously press the DISPLAY key and PICTURE MODE key of the remote control unit. 2) The SERVICE MENU screen as shown in Fig. 1 is displayed. 3) While the SERVICE MENU is displayed, again simultaneously press the DISPLAY and PICTURE MODE keys to display the Fig. 2 SYSTEM CONSTANT screen as shown in Fig. 2. 4) Refer to the SYSTEM CONSTANT table and check the setting items. Where these differ, select the setting item with the PICTURE / SOUND key and adjust the setting with the PICTURE / SOUND + / - keys. 5) After setting the items, press the OFF TIMER key to store the setting values. 6) Press the MUTE key twice to return the normal screen.	SERVICE MENU 1. VSM PRESET 2. SUB VSM 3. IF V/C Fig. 1 SYSTEM CONSTANT ☞ AFC [H] 3.593 AFC [L] 1.718 P-BASS ON SOUND STEREO Fig. 2
(5) **Receive channel setting** Refer to the OPERATING INSTRUCTIONS and set the receive channels (Channels Preset) as described.	
(6) **User settings** Check the initial setting values of the user setting items referring to Table 2 on next page. If the values do not agree with your requirement, charge the values referring to the OPERATING INSTRUCTIONS.	
(7) **SERVICE MENU setting** Items are indicated in table 3 on next page. How to set is described in SERVICE MENU BASIC OPERATION on later page.	

TABLE 1 (System Constant settings)

Setting item	Setting content	Setting value
AFC [H]	AFC voltage → 3.593 → 2.961 →	3.593
AFC [L]	AFC voltage → 2.031 → 1.718 →	1.718
P-BASS	→ Yes → NO →	NO
SOUND	→ STEREO → MONO →	STEREO

TABLE 2 (User setting values)

Setting item	Setting value
1. SUB POWER	ON
2. CHANNEL	1 POSITON
3. CHANNEL PRESET	See 2.(5) "Receive channel setting." (Page 6)
4. VOLUME	20
5. TV / VIDEO	TV
6. ON SCREEN DISPLAY	POSITION DISPLAY
7. OFF TIMER	00
8. PICTURE MODE	BRIGHT

TABLE 3 (Service Menu setting items)

Service Menu	Setting item
1. VSM PRESET	→ BRIGHT → STANDARD → SOFT →
2. SUB VSM	→ PAL → SECAM → N3.58 → N4.43 →
3. IF V/C	1. NOISE ADJ 2. VCO ADJ 3. AUDIO ATT — Do not adjust 4. DL TIME ADJ 5. DRIVE (R) 6. DRIVE (B) 7. CUT OFF (R) 8. CUT OFF (G) 9. CUT OFF (B) 10. H-CENTER 11. PEAK ACL 12. AFC GAIN — Do not adjust 13. DOUBLE TRAP 14. TRAP FINE ADJ

SERVICE ADJUSTMENTS

BEFORE STARTING ADJUSTMENTS

1. **Adjustments of this model can be performed by using the remote control unit and in the conventional manner by using adjustable parts.**
2. **Adjustments using the remote control unit are performed on the basis of the initial setting values.**

   However, where an adjustment results in the optimum picture, it may differ from the initial setting value.
3. Before adjusting, switch ON the power of the set and measuring equipment and allow these to warm up at least for 30 minutes.
4. Confirm the correct (AC230V) power is supplied.
5. Where the received or input signal is not specified, use the optimum signal for the adjustment.
6. Use care not to disturb adjustable parts (variable resistors, transformers, capacitors, etc.) which are not specifically mentioned in the adjustment steps.
7. Presetting before adjustment

   Unless otherwise indicated in the adjustment steps, use the remote control unit to preset as follows.

• PICTURE MODE	BRIGHT

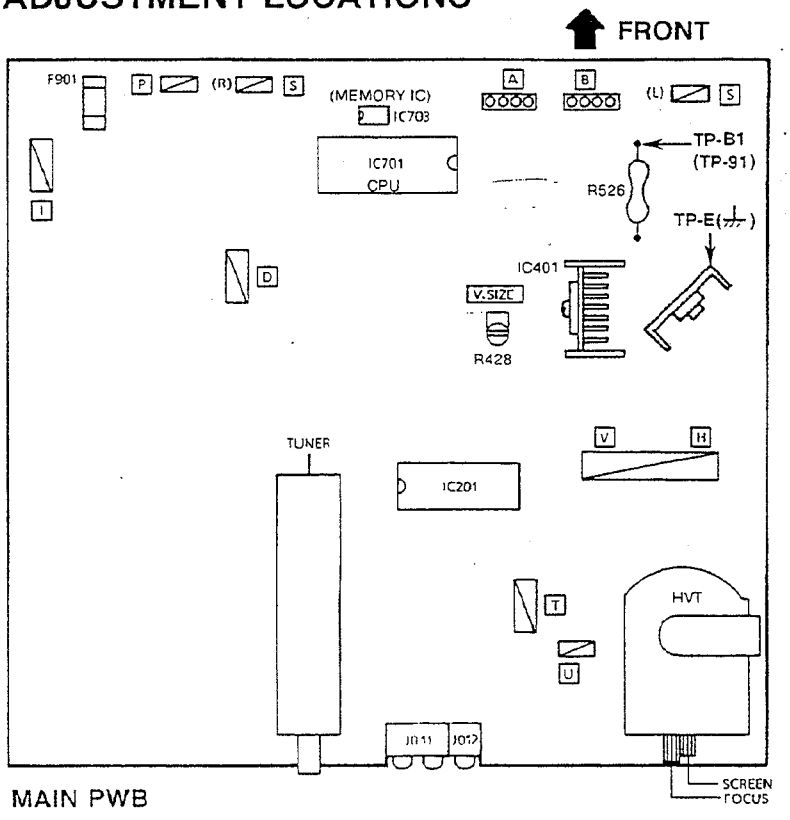
MEASURING EQUIPMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal (pattern) generator (PAL, SECAM, NTSC)
4. Remote control unit

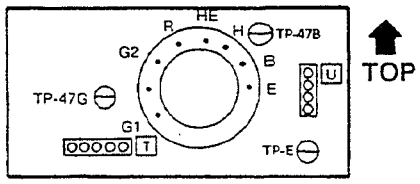
ADJUSTMENT ITEMS

Adjustment item	Adjustment item
■ ADJUSTMENTS I	7. WHITE BALANCE (Low Light)
1. B1 VOLTAGE CHECK	8. WHITE BALANCE (High Light)
2. VERTICAL SIZE	9. VSM PRESET
3. HORIZONTAL CENTER	10. VIDEO / CHROMA CIRCUIT
4. NOISE (RF AGC)	■ ADJUSTMENTS II
5. FOCUS	
6. CHROMA TRAP	

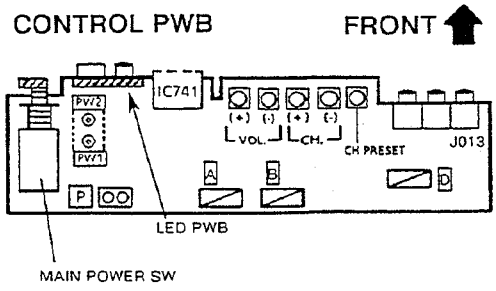
ADJUSTMENT LOCATIONS



CRT SOCKET PWB



CONTROL PWB FRONT



SERVICE MENU BASIC OPERATION

1. The remote control unit is used for SERVICE MENU operation.

2. SERVICE MENU settings (adjustments) are performed in the following three categories.

   (1) 1. VSM (Video Status Memory) PRESET

   BRIGHT, STANDARD and SOFT value settings.

   (2) 2. SUB VSM

   SUB VSM value settings for each colour system

   (3) 3. IF V/C

   IF, VIDEO and CHROMA circuit adjustment value settings.

3. SERVICE MENU basic operation

   (1) SERVICE MENU entry

   Simultaneously press the DISPLAY and PICTURE MODE keys of the remote control unit. The SERVICE MENU screen indicated in Fig. 1 is displayed.

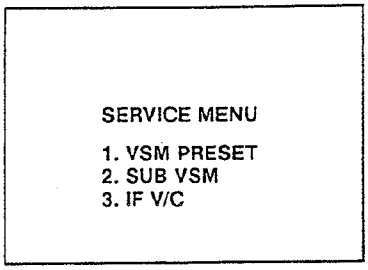
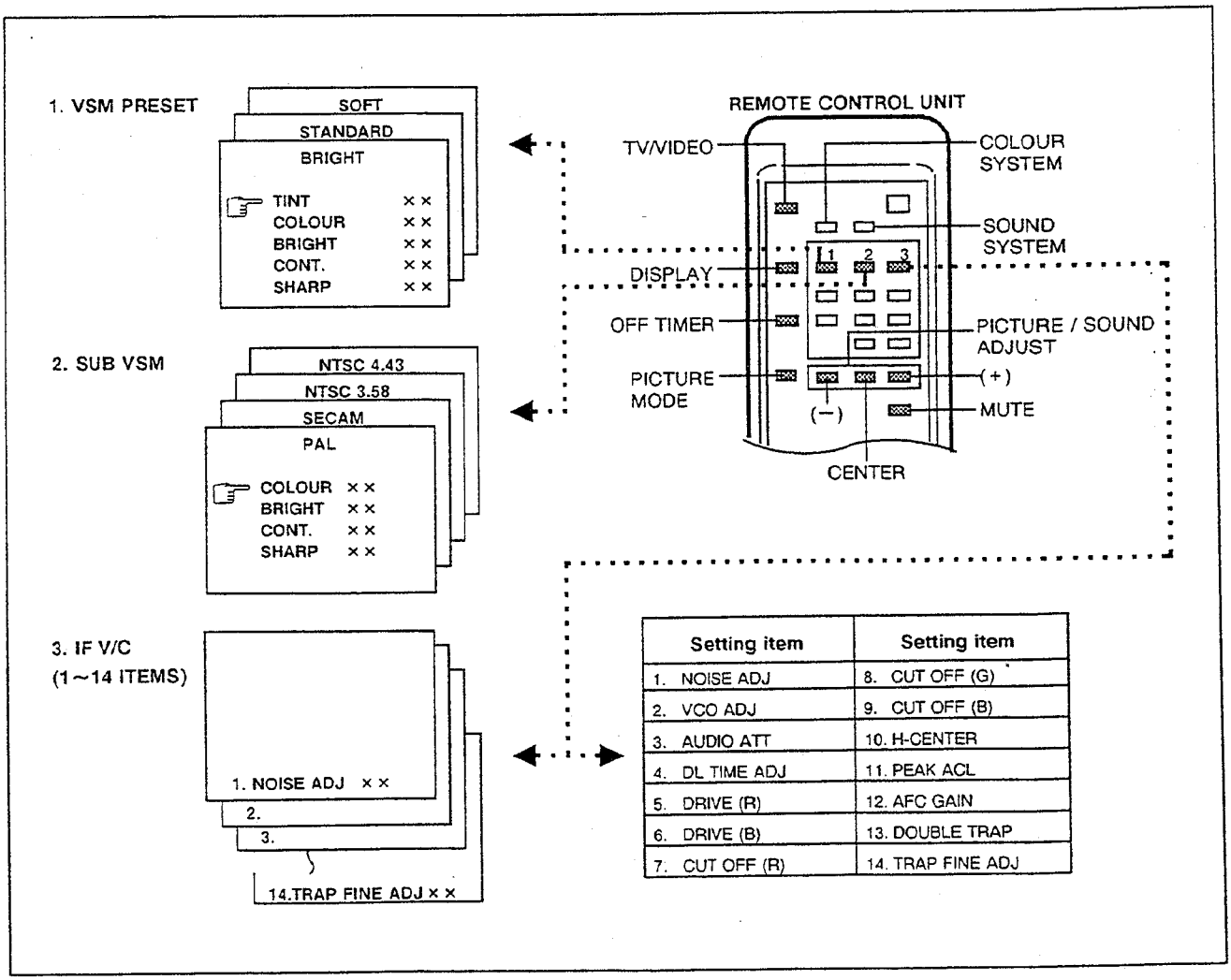


Fig. 1 (SERVICE MENU Screen)

(2) SUB MENU screen selection

Press the 1, 2 or 3 key of the remote control unit to select the SUB MENU screen within the SERVICE MENU.

SERVICE MENU ⟶ SUB MENU **1. VSM PRESET**
2. SUB VSM
3. IF V/C



Setting item	Setting item
1. NOISE ADJ	8. CUT OFF (G)
2. VCO ADJ	9. CUT OFF (B)
3. AUDIO ATT	10. H-CENTER
4. DL TIME ADJ	11. PEAK ACL
5. DRIVE (R)	12. AFC GAIN
6. DRIVE (B)	13. DOUBLE TRAP
7. CUT OFF (R)	14. TRAP FINE ADJ

Fig. 2 SUB MENU SCREEN

(3) Setting method

1) 1. VSM PRESET

① Press the PICTURE MODE key and select BRIGHT, STANDARD or SOFT.
② Press the PICTURE / SOUND CENTER key to select the desired setting item.
③ Set the adjustment value for the selected item by pressing the PICTURE / SOUND + / - keys.
④ After adjusting, release the PICTURE / SOUND + / - key to store the setting value.
⑤ To perform setting in succession, repeat steps ①-③.
⑥ Press the MUTE key to return to the SERVICE MENU screen.

2) 2. SUB VSM

① Press the COLOUR SYSTEM key and select PAL, SECAM, NTSC 3.58 or NTSC 4.43.
② Press the PICTURE / SOUND CENTER key to select the desired setting item.
③ Set the adjustment value for the selected item by pressing the PICTURE / SOUND + / - keys.
④ After adjusting, release the PICTURE / SOUND + / - key to store the setting value.
⑤ To perform setting in succession, repeat steps ①-③.
⑥ Press the MUTE key to return to the SERVICE MENU screen.

3) 3. IF V/C

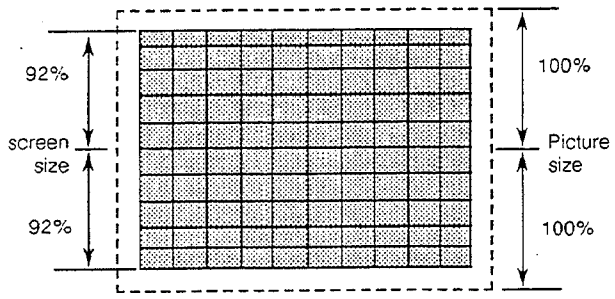
① Press the PICTURE / SOUND CENTER key to select the setting item.
② Set the adjustment value for the selected item by pressing the PICTURE / SOUND + / - keys.
③ After adjusting, release the PICTURE / SOUND + / - key to store the setting value.
④ To perform setting in succession, repeat steps ① and ②.
⑤ Press the MUTE key to return to the SERVICE MENU screen.

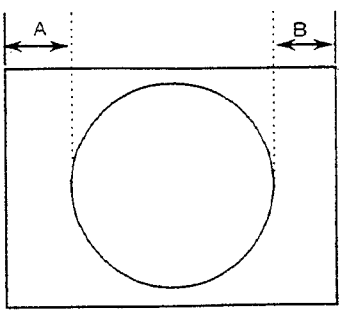
(4) SERVICE MENU release

After completing the settings, press the MUTE key in SERVICE MENU screen to return to the normal screen.

■ ADJUSTMENTS I

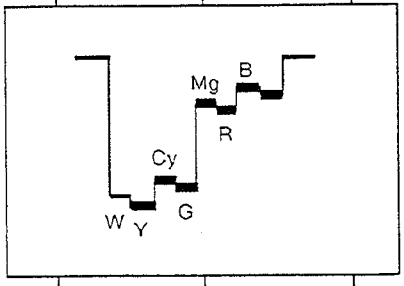
Item	Measuring instrument	Test point	Adjustment part	Description
1. B1 voltage check	• DC Voltmeter	TP-B1(TP-91) TP-E (⏚)		1. Receive a black and white signal (colour off). 2. Connect the DC voltmeter between TP-B1(TP-91) and TP-E (⏚). 3. Confirm that the voltage is DC 114V ± 2V.
2. VERTICAL SIZE adjustment	• Signal generator		V. SIZE VR (R428) [MAIN PWB]	• PICTURE MODE : STANDARD 1. Receive a crosshatch signal. 2. Adjust the V. SIZE VR to set the screen size to 92%.
3. HORIZONTAL CENTER adjustment	• Signal generator • Remote control unit		10. H. CENTER	1. Receive a 50Hz vertical frequency circle pattern signal. 2. From the SERVICE MENU, select 3. IF V/C. 3. Select 10. H-CENTER. 4. Refer to the figure and press the PICTURE / SOUND + / - keys to equalize the widths of portions A and B (A = B). 5. Receive a 60Hz vertical frequency circle pattern signal. 6. In the same manner as above, equalize the widths of portions A and B(A = B).

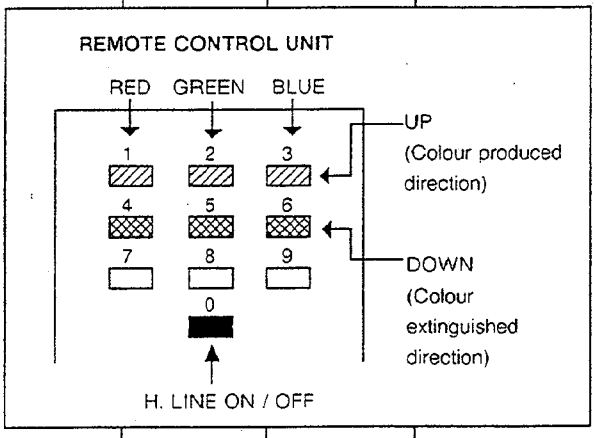




Setting (Adjustment) item	Variable range	Initial setting value
10. H-CENTER	0~15	50Hz : 2 60Hz : 7

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>4.
NOISE (RF AGC) adjustment</td><td>• Remote control unit</td><td></td><td>1. NOISE ADJ</td><td>1. Receive a broadcast signal.
2. From the SERVICE MENU, select 3. IF V/C.
3. Select 1. NOISE ADJ.
4. Press the PICTURE / SOUND + / - keys and adjust the setting value to eliminate noise on the picture.
* When noise disappears, release the PICTURE / SOUND + / - keys.
5. Select other channels and confirm no abnormality is found in the picture.
<table><tr><th>Setting (Adjustment) item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>1. NOISE ADJ</td><td>0~63</td><td>32</td></tr></table></td></tr>
<tr><td>5.
FOCUS adjustment</td><td>• Signal generator</td><td></td><td>FOCUS VR
[In HVT]</td><td>1. Receive a crosshatch signal.
2. Refer to the figure and set the FOCUS VR to the most counterclockwise position (to decrease the voltage) where the vertical and horizontal lines are as thin and clear as possible.
3. Darken the screen and check for correct focus.
* The final adjustment of the CONVERGENCE should always be done after focus adjustment. (Refer to PURITY, CONVERGENCE on later page.)</td></tr>
<tr><td>6.
CHROMA TRAP adjustment</td><td>• Signal generator
• Remote control unit
• Oscilloscope</td><td>TP-47G</td><td>14. TRAP FINE ADJ</td><td>1. Receive a PAL full field colour bar signal (75% white).
2. Connect an oscilloscope to TP-47G (Green cathode of CRT).
3. From the SERVICE MENU, select 3. IF V/C.
4. Select 14. TRAP FINE ADJ.
5. Press the PICTURE / SOUND + / - keys to switch between HIGH and LOW so as to reduce the chroma component on colour signal Y~B.
6. Input an NTSC video full field colour bar signal (75% white).
7. Repeat steps 5 to reduce the chroma component.
<table><tr><th>Setting (Adjustment) item</th><th>Setting value</th></tr><tr><td>14. TRAP FINE ADJ</td><td>HIGH / LOW</td></tr></table></td></tr>
</table>



<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>7.
WHITE
BALANCE
(Low Light)
adjustment</td><td>• Signal generator
• Remote control unit</td><td></td><td>7. CUT OFF (R)
8. CUT OFF (G)
9. CUT OFF (B)
SCREEN VR
(In VHT)</td><td>1. Receive a black and white signal (colour off).
2. From the SERVICE MENU, select 3. IF V/C.
3. Select 7. CUTOFF (R), 8. CUTOFF (G) and 9. CUTOFF (B), and set each value to 128.
4. Select one of the modes in step 3 and press the 0 key of the remote control unit to produce a single horizontal line.
5. Turn the SCREEN VR fully counterclockwise, and slowly turn it clockwise to where a red, blue or green colour is faintly visible.
6. Press the keys 1-6 of the remote control unit and adjust the other two colours to where a single horizontal line appears in white.
7. Turn the SCREEN VR to where the single horizontal line glows faintly.
8. Press the 0 key again to return to the normal screen.
 
<table><tr><th>Setting (Adjustment) item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>7. CUTOFF (R)</td><td>0~255</td><td>128</td></tr><tr><td>8. CUTOFF (G)</td><td>0~255</td><td>128</td></tr><tr><td>9. CUTOFF (B)</td><td>0~255</td><td>128</td></tr></table>• When an irregular screen is caused by pressing a wrong key, turn off the MAIN POWER SW and turn it on again to restart adjustment.</td></tr>
<tr><td>8.
WHITE
BALANCE
(High Light)
adjustment</td><td>• Signal generator
• Remote control unit</td><td></td><td>5. DRIVE (R)
6. DRIVE (B)</td><td>1. Receive a black and white signal (colour off).
2. From the SERVICE MENU, select 3. IF V/C.
3. Select 5. DRIVE (R) and 6. DRIVE (B).
4. Press the PICTURE / SOUND + / - keys to produce a white screen.
<table><tr><th>Setting (Adjustment) item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>5. DRIVE (R)</td><td>0~63</td><td>32</td></tr><tr><td>6. DRIVE (B)</td><td>0~63</td><td>32</td></tr></table></td></tr>
<tr><td>9.
VSM
PRESET
adjustment</td><td>• Remote control unit</td><td></td><td>TINT
COLOUR
BRIGHT
CONT.
SHARP</td><td>1. From the SERVICE MENU, select 1. VSM Preset.
2. Select BRIGHT witn the PICTURE MODE key.
3. Refer to the table below and press the PICTURE / SOUND + / - keys to set the setting values from TINT to SHARP as indicated.
4. In the same manner, select and perform settings for the STANDARD and SOFT VSM modes.
<table><tr><th rowspan="2">Setting item</th><th colspan="3">VSM MODE (PICTURE MODE)</th></tr><tr><th>BRIGHT</th><th>STANDARD</th><th>SOFT</th></tr><tr><td>TINT SETTING VALUE</td><td>30</td><td>30</td><td>30</td></tr><tr><td>COLOUR SETTING VALUE</td><td>15</td><td>15</td><td>15</td></tr><tr><td>BRIGHT SETTING VALUE</td><td>15</td><td>15</td><td>15</td></tr><tr><td>CONT. SETTING VALUE</td><td>30</td><td>24</td><td>17</td></tr><tr><td>SHARP SETTING VALUE</td><td>20</td><td>15</td><td>10</td></tr></table>VSM Preset setting values</td></tr>
</table>

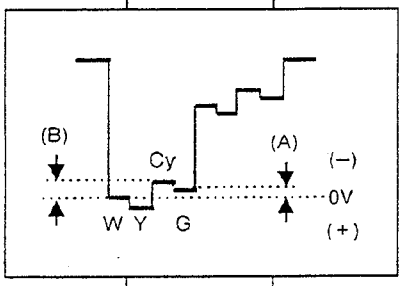
<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>10.
VIDEO and CHROMA CIRCUITS adjustment</td><td>•Remote control unit</td><td></td><td>TINT
COLOUR
BRIGHT
CONTRAST
SHARP</td><td></td></tr>
<tr><td>(1) SUB VSM SETTING</td><td></td><td></td><td></td><td>• Press the PICTURE MODE key to select BRIGH mode.
1. From the SERVICE MENU, select 2. SUB VSM.
2. Press the COLOUR SYSTEM key to select TV PAL mode.
3. Set the PAL SYSTEM to the initial setting values for COLOUR, BRIGHT, CONT. and SHARP as indicated in the table by pressing the PICTURE / SOUND +/- keys.
4. Next, in the same manner, set the SECAM SYSTEM COLOUR, and the NTSC 3.58 SYSTEM COLOUR and TINT.
5. Press the TV / VIDEO key to switch from the TV to the VIDEO mode.
6. Refer to the table and set the VIDEO mode SHARP item initial values as indicated.

* Items in parentheses ( ) are automatically set to below table when the NTSC 3.58 COLOUR and TINT are set.
* Arrows indicate the SECAM and NTSC initial setting values are the same as PAL.</td></tr>
<tr><td>(2) BRIGHT setting</td><td></td><td></td><td>BRIGHT</td><td>1. If BRIGHT is not optimum at the SUB VSM initial setting value, finely adjust the SUB VSM BRIGHT to obtain optimum brightness.</td></tr>
<tr><td>(3) CONT. setting</td><td></td><td></td><td>CONTRAST</td><td>1. If CONTRAST is not optimum at the SUB VSM initial setting value, finely adjust the SUB VSM CONTRAST to obtain optimum contrast.</td></tr>
</table>

Setting item		COLOUR SYSTEM			
		PAL	SECAM	NTSC 3.58	NTSC 4.43
TINT INITIAL SETTING VALUES	TV	—	—	+41	(-4)
	VIDEO			(+2)	(-4)
COLOUR INITIAL SETTING VALUE		+33	←	+30	(+0)
BRIGHT INITIAL SETTING VALUE		+17	←	←	←
CONTRAST INITIAL SETTING VALUE		+30	←	←	←
SHARP INITIAL SETTING VALUES	TV	+3	←	←	←
	VIDEO	+9	←	←	←

SUB-VSM initial setting values

Item	Measuring instrument	Test point	Adjustment part	Description
(4) COLOUR setting	• Signal generator • Oscilloscope • Remote control unit	TP-47G	COLOUR (PAL~NTSC)	**[Adjustment without measuring instruments]** 1. If COLOUR is not optimum at the SUB VSM initial setting value, finely adjust the SUB VSM COLOUR to obtain optimum colour.
			PAL COLOUR	**[Adjustments using test instruments]** (PAL COLOUR) 1. Receive a PAL full field colour bar signal (75% white). 2. Set the SUB VSM PAL COLOUR initial setting value as indicated in the above table. 3. Connect an oscilloscope to TP-47G (Green cathode of CRT). 4. Refer to the left figure and adjust the SUB VSM PAL COLOUR so that value (A) is -5V(W-G).
			SECAM COLOUR	(SECAM COLOUR) 5. Receive a SECAM full field colour bar signal (75% white). 6. Set the SUB VSM SECAM COLOUR initial setting value as indicated in the above table. 7. Refer to the left figure and adjust the SUB VSM SECAM COLOUR so that value (A) is -5V(W-G).
			NTSC 3.58 COLOUR	(NTSC 3.58 COLOUR) 8. Receive an NTSC 3.58 full field colour bar signal (75% white). 9. Set the SUB VSM NTSC 3.58 COLOUR initial setting value as indicated in the above table. 10. Refer to the left figure and adjust the SUB VSM NTSC 3.58 COLOUR so that value (A) is -7V(W-G).
				(NTSC 4.43 COLOUR) This is automatically set when NTSC 3.58 COLOUR is set.
(5) TINT setting	• Signal generator • Oscilloscope • Remote control unit	TP-47G	NTSC 3.58 TINT	**[Adjustment without measuring instruments]** 1. If TINT is not optimum at the SUB VSM initial setting value, fine adjust so that optimum is obtained with the SUB VSM NTSC 3.58 TINT.
			NTSC 3.58 TINT	**[Adjustments using test instruments]** (NTSC 3.58 TINT) 1. Receive an NTSC 3.58 full field colour bar signal(75% white). 2. Set the SUB VSM NTSC 3.58 TINT initial setting value as indicated in the table. 3. Connect an oscilloscope to TP-47G (Green cathode of CRT). 4. Refer to the above figure and adjust the SUB VSM NTSC 3.58 TINT so that value (B) is -10V(W-Cy).
				(NTSC 4.43 TINT) This is automatically set when NTSC 3.58 TINT is set.



■ ADJUSTMENTS II

Ordinarily, avoid changing the items indicated in the following tables.

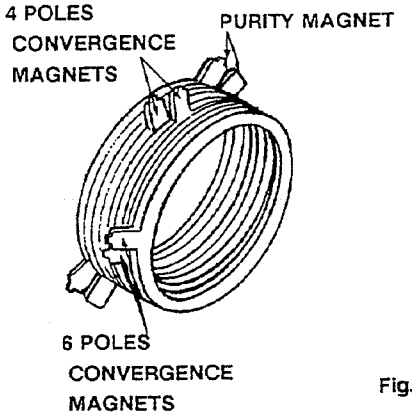
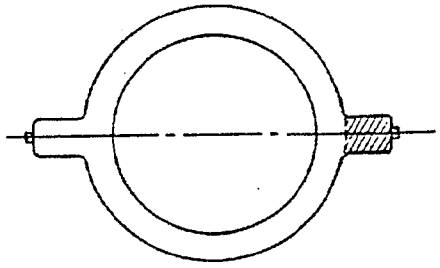
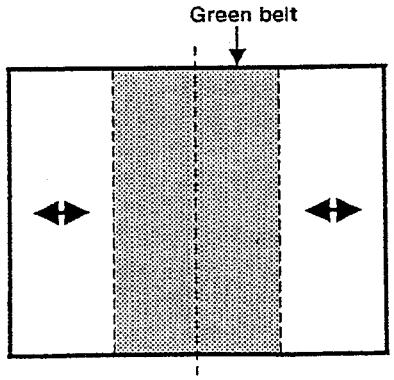
SERVICE MENU 3. IF V/C setting items

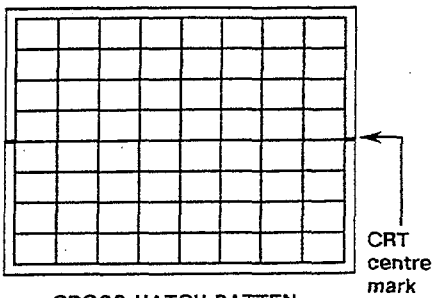
Setting item	Setting content / range	Fixed value
2. VCO ADJ	0~63	32
3. AUDIO ATT	0~127	73
11. PEAK ACL	150 IRE / 120 IRE	150 IRE
12. AFC GAIN	NORMAL / HIGH	HIGH
13. DOUBLE TRAP	SINGLE / DOUBLE	SINGLE

Setting item	Setting range	TV / VIDEO	Fixed value			
			PAL	SECAM	NTSC 3.58	NTSC 4.43
4. DL TIME ADJ	0~7	TV	4	2	4	2
		VIDEO	4	7	4	4

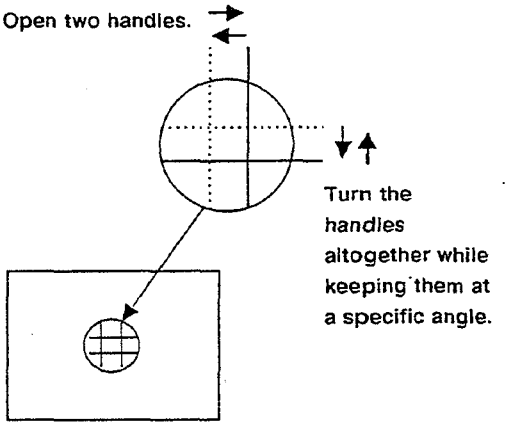
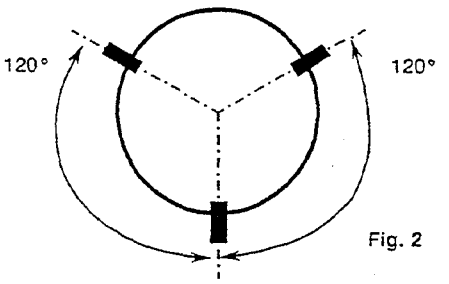
PURITY, CONVERGENCE

1. ADJUSTMENT OF PURITY

Adjustment Part	Description	Remarks
WEDGE PURITY MAGNET DEF. YOKE	Prior to starting adjustment, perform the following items: 1. Remove a wedge inserted into the DEF. YOKE. At this time, clean the portion from which the wedge has been removed. 2. Peel adhesive used to fix six magnets with a tip of screwdriver so that the magnets can be turned freely. 3. Input a white raster with the pattern generator. 4. Demagnetize the CRT with a demagnetizer. 5. Set the brightness and picture to slightly higher than the standard values, and warm up for about 20 ~ 30 minutes. Adjustment method 1. Input a green raster with the pattern generater. 2. After loosening the set screw of the DEF. YOKE, draw the yoke to the rear side to let irregular colour of a vertical belt form appear on the screen. 3. Mutually pile up two PURITY MAGNETS, and set them to a horizontal position as initial magnets (Fig. 2). 4. While opening and closing or turning the handles of PURITY MAGNETS, let green vertical belts appear on the centre of the screen (Fig. 3). 5. Push out the DEF. YOKE to the front side, and set the position of the DEF. YOKE so that the entire screen becomes totally green (Fix the DEF. YOKE temporarily with a WEDGE so that the yoke is not moved).	 Fig. 1 **Align two purity magnets horizontally.**  Fig. 2  **Shift the green belt to the centre** Fig. 3

Adjustment Part	Description	Remarks
	6. Receive a cross-hatch pattern. 7. With the DEF. YOKE, make the line horizontal and let the line be further closer to the vertical centre position (In this case, do not change the front and rear positions of the DEF. YOKE). 8. Change the initial picture appear on the screen. 9. Make sure that the purity has been obtained regarding the red, blue and white raster. 10. Lightly tighten the set screws so that the DEF. YOKE is not moved back and forth.	 CROSS-HATCH PATTEN Fig. 4

2. CONVERGENCE

Adjustment Part	Description	Remarks
CONVERGENCE MAGNET DEF. YOKE	Adjustment method 1. Receive a cross-hatch pattern. [STATIC CONVERGENCE] 2. With the 4-POLE CONVERGENCE MAGNETS, overlap the red and blue lines at the centre of the screen to turn the colour to magenta (red/blue). 3. Next, overlap magenta (red/blue) and green lines at the centre of the screen by turning the handles of the 6-POLE CONVERGENCE MAGNETS. 4. By repeating steps 2 and 3 above, align the convergence of vertical line to that of the horizontal line at the centre of the screen. [DYNAMIC CONVERGENCE] 5. Move the DEF. YOKE up, down, right, or left so as to make the convergence circumferential screen the best. 6. Make sure that the convergence of whole screen is the best. 7. Insert the removed WEDGE into the initial position and fix it. (Fig. 2) 8. Firmly tighten the set screws of the DEF. YOKE with an appropriate torque. 9. Fix the six magnets using adhesive.	 Fig. 1  Fig. 2

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied .
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied .
- As a rule, the resistors and capacitors which are indicated as shown in "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board .
  When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" .

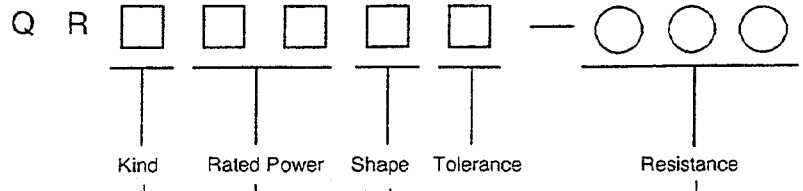
ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% - 10%	+50% - 10%	+80% - 20%	+100% - 0%

HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR



Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 w
1 2	1/2 w
1 4	1/4 w
1 6	1/6 w
1 8	1/8 w

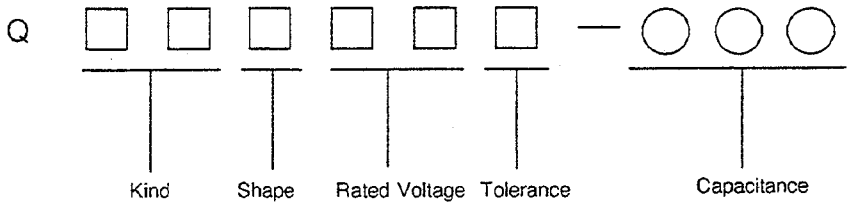
Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
please note that,in case of resistance less than 10 Ω, a letter "R"will be effective as point.

EX.

2.2 Ω	=		2R2
470 Ω	=	47×10^{1} →	471
150kΩ	=	15×10^{4} →	154

■ CAPACITOR



Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

5Figure / 6Figure	0	1	2
A		10V	100V
C		16V	160V
D			200V
E		25V	250V
H		50V	500V
J	6.3V	63V	
V		35V	

Indicate with first two-figure expressed by pF and following 0.
Please note that,in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

5pF	=		5R0
1000pF	=	10×10^{2} →	102
47μF	=	47×10^{6} →	476

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

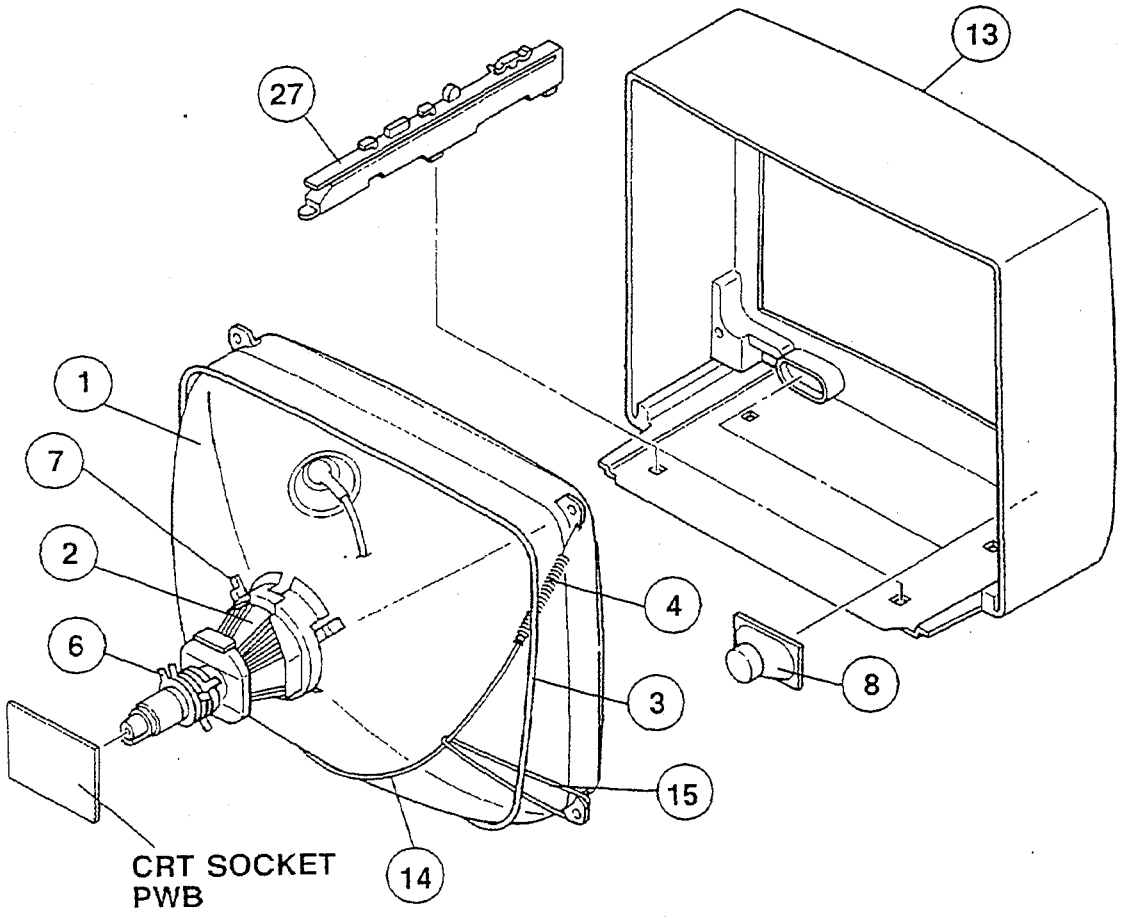
EXPLODED VIEW PARTS LIST

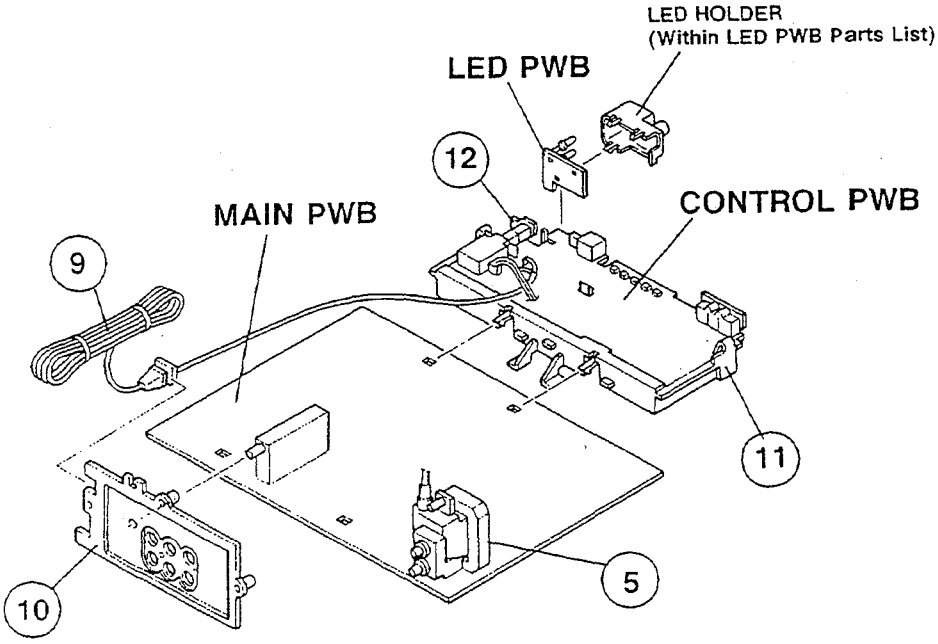
⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	1	A59LFJ93X	PICTURE TUBE(C)	V01	
⚠	2	CE20282-00A	DEFLECTION YOKE	DY01	
⚠	3	CELD055-001J6N	DEG COIL	L01	
	4	A48457-3-H	SPRING		
⚠	5	CJ28069-00CJ1	HVT	(T1501)	
	6	CE42378-00B	PC MAGNET		
	7	CE40764-00A	WEDGE ASSY	(×4)	
	8	CEBSM12D-06KJ4	CONE SPEAKER	(×2)SP01,SP02	
⚠	9	QMP73G0-200J5	POWER CORD	(AV-25MEX)	
⚠	9	QMP73P0-200J5	POWER CORD	(AV-25MEX-A)	
	10	CM22837-B05-H	TERMINAL BOARD		
	11	CM12601-001-H	CONTROL BASE		
	12	CM48073-001-H	KNOB CAP		
	13	CM12472-00G-H	FRONT CABI ASSY		
	14	CHGB0020-0A-FH	BRAIDED ASSY		
	15	CHGB0016-0C-FH	SUB BRAIDED ASSY		
	16	CM35820-004-H	POWER KNOB		
	17	CM35235-006-H	SPRING		
	18	CM35821-004	INDICATOR WINDOW		
	19	CM47929-001	JVC MARK		
	20	CM35822-001-H	CONTROL KNOB		
	21	CM22696-A08-H	CONTROL DOOR		
⚠	22	CM12600-B01-VH	REAR COVER		
	23	GBSF4016Z-H	TAPPING SCREW	(×10)	
⚠	24	CM22925-001	RATING LABEL	(AV-25MEX)	
⚠	24	CM22880-002	RATING LABEL	(AV-25MEX-A)	
	25	CM45436-00A	DOOR LATCH		
	26	CM47857-001-H	REMOCON LENS		
	27	CM22824-A01-VH	CHASSIS RAIL	(×2)	
	28	CM22695-00D-H	PUNCHING SHEET		
	29	CM48074-002-H	PVC SHEET A		
	30	CM48075-002-H	PVC SHEET B		

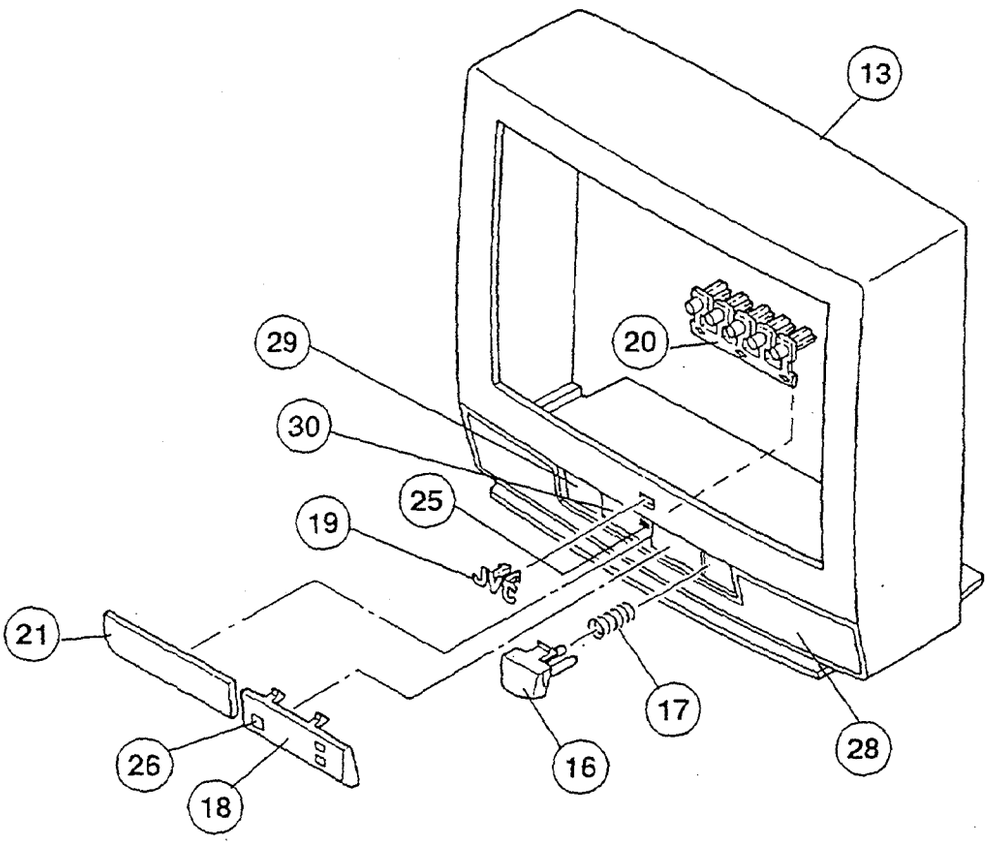
REMOTE CONTROL UNIT (RM-C461-1H)

⚠	Ref.No.	Part No.	Part Name	Description	Local
		BAS11M201A	BATTERY COVER		

EXPLODED VIEW



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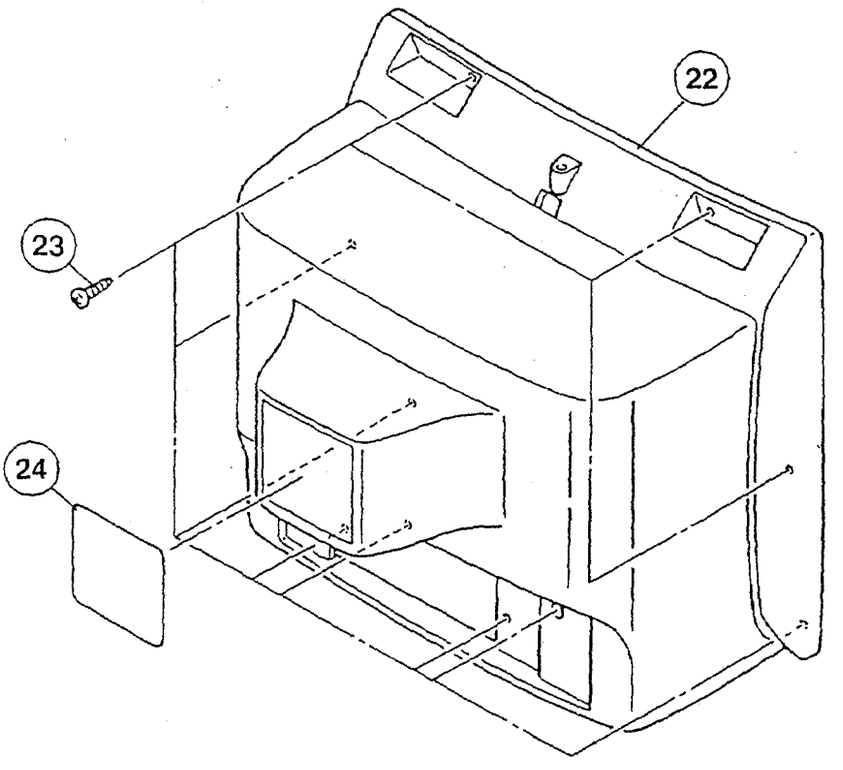
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23
24

PRINTED WIRING BOARD PARTS LIST

MAIN PW BOARD ASS'Y (SMZ-1009A-H2)

⚠	Symbol No.	Part No.	Part Name	Description			Local
	V A R I A B L E R E S I S T O R						
	R1428	QVPE611-503HZ	V R(V.SIZE)	50k Ω B			
	R E S I S T O R						
	R1315	QRD123J-474SX	C R	470k Ω	1/2W	J	
	R1326	QRD123J-474SX	C R	470k Ω	1/2W	J	
	R1526	QRG039J-562	OM R	5.6k Ω	3W	J	
	R1531	QRG029J-123	OM R	12k Ω	2W	J	
	R1561	QRG019J-560S	OM R	56 Ω	1W	J	
	R1599	QRG029J-103A	OM R	10k Ω	2W	J	
	R1611	QRD123J-102SX	C R	1k Ω	1/2W	J	
	R1617	QRD123J-102SX	C R	1k Ω	1/2W	J	
⚠	R1901	QRF154K-4R7	UNF R	4.7 Ω	15W	K	
	R1902	QRG039J-223A	OM R	22k Ω	3W	J	
	R1903	QRM059J-R27	MP R	0.27 Ω	5W	J	
	R1904	QRX029J-2R7A	MF R	2.7 Ω	2W	J	
	R1905	QRG019J-220S	OM R	22 Ω	1W	J	
	R1908	QRD123J-822SX	C R	8.2k Ω	1/2W	J	
⚠	R1911	QRD149J-102S	C R	1k Ω	1/4W	J	
	R1915	QRG029J-473A	OM R	47k Ω	2W	J	
⚠	R1918	QRD149J-101S	C R	100 Ω	1/4W	J	
⚠	R1919	QRD149J-392S	C R	3.9k Ω	1/4W	J	
	R1951	QRX029J-1R0A	MF R	1 Ω	2W	J	
	R1952	QRX029J-1R2A	MF R	1.2 Ω	2W	J	
	R1954	QRD123J-272SX	C R	2.7k Ω	1/2W	J	
	R1982	QRX019J-2R2S	MF R	2.2 Ω	1W	J	
	C A P A C I T O R						
	C1002	QEM61CK-476MZ	E CAP.	47 μF	16V	K	
	C1005	QFV71HJ-124MZ	TF CAP.	0.12 μF	50V	J	
	C1121	QFV71HJ-124MZ	TF CAP.	0.12 μF	50V	J	
	C1122	QFV71HJ-224MZ	TF CAP.	0.22 μF	50V	J	
	C1126	QFV71HJ-124MZ	TF CAP.	0.12 μF	50V	J	
	C1127	QFV71HJ-104MZ	TF CAP.	0.1 μF	50V	J	
	C1201	QFLC1HJ-103MZ	M CAP.	0.01 μF	50V	J	
	C1202	QETC0JM-108Z	E CAP.	1000 μF	6.3V	M	
	C1211-13	QEN61EM-106Z	BP E CAP.	10 μF	25V	M	
	C1303	QFLC1HJ-473MZ	M CAP.	0.047 μF	50V	J	
	C1305	QETC0JM-477Z	E CAP.	470 μF	6.3V	M	
	C1306-08	QFV71HJ-124MZ	TF CAP.	0.12 μF	50V	J	
	C1309-10	QFLC1HJ-103MZ	M CAP.	0.01 μF	50V	J	
	C1312-13	QFV71HJ-474MZ	TF CAP.	0.47 μF	50V	J	
	C1314	QFV71HJ-124MZ	TF CAP.	0.12 μF	50V	J	
	C1315	QFLC1HJ-223MZ	M CAP.	0.022 μF	50V	J	
	C1401	QETB1VM-108	E CAP.	1000 μF	35V	M	
	C1423	QFLC1HJ-103MZ	M CAP.	0.01 μF	50V	J	
	C1431	QEE61VK-105BZ	TAN.CAP.	1 μF	35V	K	
	C1432-33	QETC1VM-107Z	E CAP.	100 μF	35V	M	
	C1512	QFLC1HJ-473MZ	M CAP.	0.047 μF	50V	J	
	C1524	QETC2CM-105Z	E CAP.	1 μF	160V	M	
⚠	C1526	QFZ0117-7801S	MPP CAP.	7800 p F1.4kVH		±2.5%	
⚠	C1527	QFZ0117-3601S	MPP CAP.	3600 p F1.4kVH		±2.5%	
	C1528	QEHB2CM-476M	E CAP.	47 μF	160V	M	
⚠	C1529	QFZ0119-624S	MPP CAP.	0.62 μF	200V	±3%	
	C1535	QETC2EM-475Z	E CAP.	4.7 μF	250V	M	
	C1541	QETC2EM-106Z	E CAP.	10 μF	250V	M	
	C1562	QFLC1HJ-103MZ	M CAP.	0.01 μF	50V	J	
	C1565	QFLC1HJ-103MZ	M CAP.	0.01 μF	50V	J	
	C1566	QFLC1HJ-223MZ	M CAP.	0.022 μF	50V	J	
	C1567	QFLC1HJ-103MZ	M CAP.	0.01 μF	50V	J	
	C1603	QFV71HJ-224MZ	TF CAP.	0.22 μF	50V	J	
	C1606	QEN61HM-105Z	BP E CAP.	1 μF	50V	M	

⚠	Symbol No.	Part No.	Part Name	Description	Local
	CAPACITOR				
	C1607	QFV71HJ-563MZ	TF CAP.	0.056 µF 50V	J
	C1608	QFLC1HJ-153MZ	M CAP.	0.015 µF 50V	J
	C1610	QFLC1HJ-153MZ	M CAP.	0.015 µF 50V	J
	C1612	QEN61CM-106Z	BP E CAP.	10 µF 16V	M
	C1614	QEN61CM-106Z	BP E CAP.	10 µF 16V	M
	C1617	QEN61HM-105Z	BP E CAP.	1 µF 50V	M
	C1618	QFV71HJ-563MZ	TF CAP.	0.056 µF 50V	J
	C1621	QFLC1HJ-103MZ	M CAP.	0.01 µF 50V	J
	C1624	QFN31HJ-562ZJ1	M CAP.	5600 p F 50V	J
	C1657	QETC1VM-107Z	E CAP.	100 µF 35V	M
	C1659	QETC0JM-107Z	E CAP.	100 µF 6.3V	M
	C1660	QFV71HJ-824MZ	TF CAP.	0.82 µF 50V	J
	C1661	QFV71HJ-104MZ	TF CAP.	0.1 µF 50V	J
	C1664	QFLC1HJ-823MZ	M CAP.	0.082 µF 50V	J
	C1665	QFV71HJ-104MZ	TF CAP.	0.1 µF 50V	J
	C1703	QFV71HJ-124MZ	TF CAP.	0.12 µF 50V	J
	C1704	QFLC1HJ-473MZ	M CAP.	0.047 µF 50V	J
	C1707	QFV71HJ-124MZ	TF CAP.	0.12 µF 50V	J
	C1709	QFV71HJ-124MZ	TF CAP.	0.12 µF 50V	J
	C1711	QETC0JM-477Z	E CAP.	470 µF 6.3V	M
	C1712	QCT25CH-330AZ	C CAP.	33 p F 50V	J
	C1713	QCT25CH-120AZ	C CAP.	12 p F 50V	J
	C1717	QFV71HJ-124MZ	TF CAP.	0.12 µF 50V	J
	C1719	QFV71HJ-124MZ	TF CAP.	0.12 µF 50V	J
	C1726	QFV71HJ-124MZ	TF CAP.	0.12 µF 50V	J
	C1728	QEN61HM-105Z	BP E CAP.	1 µF 50V	M
⚠	C1901	QFZ9036-104M	MF CAP.	0.1 µ FAC250V	M
⚠	C1904	QCZ9036-471M	C CAP.	470 p FAC400V	K
⚠	C1906	QCZ9057-472M	C CAP.	4700 p FAC400V	M
⚠	C1907	QCZ9057-472M	C CAP.	4700 p FAC400V	M
⚠	C1908	QCZ9057-472M	C CAP.	4700 p FAC400V	M
	C1910	QEZ0199-227R	E CAP.	220 µF	M
	C1911	QCZ0122-102U	C CAP.	1000 p F 2000V	K
	C1914	QCZ0122-151U	C CAP.	150 p F 2000V	K
	C1917	QETC2AM-106Z	E CAP.	10 µF 100V	M
	C1920	QCZ0122-561A	C CAP.	560 p F 2000V	K
	C1921	QCZ0132-152AZ	C CAP.	1500 p F 500V	K
	C1924	QEHB2CM-107M	E CAP.	100 µF 160V	M
	C1929	QETC1JM-106Z	E CAP.	10 µF 63V	M
	C1931	QFLC2AK-473MZ	M CAP.	0.047 µF 100V	K
	C1932	QETB1JM-226	E CAP.	22 µF 63V	M
	C1951	QETC0JM-107Z	E CAP.	100 µF 6.3V	M
	C1982	QETC0JM-477Z	E CAP.	470 µF 6.3V	M
⚠	C1991	QCZ9036-332M	C CAP.	3300 p FAC400V	M
	TRANSFORMER				
	T1121	CELT001-303	C.WAVE TRANSF.		
⚠	T1501	CJ28069-00CJ1	HV TRANSF		
	T1521	CE42034-001	H.DRIVE TRANSF.		
⚠	T1901	CETS006-001J3	SWITCH.TRANSF.		
	COIL				
	L1002-03	CELP026-5R6Z	PEAKING COIL	5.6 µH	
	L1101	CELP041-R82	PEAKING COIL	0.82 µH	
	L1102-03	CELP026-8R2Z	PEAKING COIL	8.2 µH	
	L1104	CELP042-2R7	PEAKING COIL	2.7 µH	
	L1121-23	CELP026-8R2Z	PEAKING COIL	8.2 µH	
	L1124	CELP026-150Z	PEAKING COIL	15 µH	
	L1301-02	CELP026-101Z	PEAKING COIL	100 µH	
	L1541	CELC901-070J6	HEATER CHOKE		
	L1542	CELL009-002	LINEARITY COIL		
	L1621	CELP026-8R2Z	PEAKING COIL	8.2 µH	
	L1701	CELP026-8R2Z	PEAKING COIL	8.2 µH	
	L1702	CELP026-4R7Z	PEAKING COIL	4.7 µH	
	L1703	CELP026-390Z	PEAKING COIL	39 µH	

⚠	Symbol No.	Part No.	Part Name	Description	Local
	C O I L				
	L1704-06	CELP026-150Z	PEAKING COIL	15 μH	
	L1921-22	CELC058-820Z	CHOKE COIL		
	D I O D E				
	D1001	MTZJ33(A)-T2	ZENER DIODE		
	D1101-02	1SS85-T2	SI.DIODE		
	D1121	1SS133-T2	SI.DIODE		
	D1201	MTZJ5.6(A)-T2	ZENER DIODE		
	D1202	MTZJ9.1(B)-T2	ZENER DIODE		
	D1221	MTZJ15(A)-T2	ZENER DIODE		
	D1401	RGP10J(C1)-T3	SI.DIODE		
	D1421	MTZJ9.1(B)-T2	ZENER DIODE		
	D1431	1SR35-100A-T2	SI.DIODE		
	D1511	RGP10J(C1)-T3	SI.DIODE		
	D1513	MTZJ5.1(A)-T2	ZENER DIODE		
	D1514	1SS133-T2	SI.DIODE		
	D1524	RGP10J(C1)-T3	SI.DIODE		
	D1531	RGP10J(C1)-T3	SI.DIODE		
	D1541	RH1S-T3	SI.DIODE		
	D1542	MTZJ5.1(A)-T2	ZENER DIODE		
	D1561	MTZJ8.2(B)-T2	ZENER DIODE		
	D1611-12	MTZJ15(A)-T2	ZENER DIODE		
	D1644	1SS133-T2	SI.DIODE		
	D1701-05	1SS133-T2	SI.DIODE		
	D1706-11	MTZJ7.5(B)-T2	ZENER DIODE		
	D1713	MTZJ6.8(C)-T2	ZENER DIODE		
	D1714-16	1SS133-T2	SI.DIODE		
⚠	D1901	D3SBA60	DIODE BRIDGE		
	D1902	RGP10J(C1)-T3	SI.DIODE		
	D1904	AU01Z-T2	SI.DIODE		
	D1906-07	AU01Z-T2	SI.DIODE		
	D1908	MTZJ7.5(B)-T2	ZENER DIODE		
	D1910	RU1C-LFC4	SI.DIODE		
	D1911	1SS133-T2	SI.DIODE		
	D1912	MTZJ12(C)-T2	ZENER DIODE		
	D1921	RU3AM-LFC4	SI.DIODE		
	D1922	RGP10J(C1)-T3	SI.DIODE		
	D1923	RU3YX-LFC4	SI.DIODE		
	D1924	RGP10J(C1)-T3	SI.DIODE		
	D1925	1SS133-T2	SI.DIODE		
	D1929	MTZJ10(A)-T2	ZENER DIODE		
	D1930	1SS133-T2	SI.DIODE		
	D1953	MTZJ7.5(B)-T2	ZENER DIODE		
	D1983-84	1SR35-100A-T2	SI.DIODE		
	T R A N S I S T O R				
	Q1101-02	2SC5083(L-P)-T	SI.TRANSISTOR		
	Q1103-04	DTC124ESA-T	DIGI TRANSISTOR		
	Q1121-23	DTC124ESA-T	DIGI TRANSISTOR		
	Q1124	2SA933AS(QR)-T	SI TRANSISTOR		
	Q1125-26	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1201	2SA933AS(QR)-T	SI TRANSISTOR		
	Q1202	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1222	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1301	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1302	DTC124ESA-T	DIGI TRANSISTOR		
	Q1303	2SA673(C)-T	SI.TRANSISTOR		
	Q1521	2SC2482(C1)-T	SI.TRANSISTOR		
⚠	Q1522	2SD1878-YD	SI.TRANSISTOR	H.OUT	
	Q1611-12	DTC144ES-T	DIGI.TRANSISTOR		
	Q1621-22	2SA933AS(QR)-T	SI TRANSISTOR		
	Q1624	DTC124ESA-T	DIGI TRANSISTOR		
	Q1625-26	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1627	DTC124ESA-T	DIGI TRANSISTOR		
	Q1641	2SA933AS(QR)-T	SI TRANSISTOR		

⚠	Symbol No.	Part No.	Part Name	Description	Local
	TRANSISTOR				
	Q1651	DTC144ES-T	DIGI.TRANSISTOR		
	Q1701	2SA933AS(QR)-T	SI TRANSISTOR		
	Q1702-03	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1705	DTC124ESA-T	DIGI TRANSISTOR		
	Q1706	2SC1740S(QR)-T	SI.TRANSISTOR		
	Q1707	2SK301(P)-T	F.E.T.		
	Q1708	DTC323TS-T	DIGI.TRANSISTOR		
	Q1901	2SD1853-T	SI.TRANSISTOR		
	Q1923	2SC2240(GB)-T	SI.TRANSISTOR		
	Q1924	DTC144ES-T	DIGI.TRANSISTOR		
	Q1925	2SA1013(O)-T	SI.TRANSISTOR		
	Q1926	2SA966(OY)-T	SI.TRANSISTOR		
	Q1927	DTC144GS-T	DIGI TRANSISTOR		
	Q1951	2SA949(Y)C1	SI.TRANSISTOR		
	IC				
	IC1201	M52343SP-Ⓕ	I.C(MONO-ANA)		
	IC1202	LA7220	I.C(MONO-ANA)		
	IC1301	U3660M-B	I.C(MONO-ANA)		
	IC1302	M52325P	I.C(MONO-ANA)		
	IC1401	LA7837	I.C(MONO-ANA)		
	IC1501	AN78N12	I.C.		
	IC1601	TDA1526	I.C.(MONO-ANA)		
	IC1602	LA4261	I.C(MONO-ANA)		
	IC1621	LA7975	I.C(MONO-ANA)		
	IC1701	M37102M8-C41SP	I.C(MICRO-COMP)		
	IC1702	BU4066BC	I.C(DIGI-MOS)		
	IC1703	XL24C04P-21ME	I.C(MEMORY-OTH)		
	IC1704	L78LR05E-MA	I.C(MONO-ANA)		
	IC1901	STR-S6707	I.C(HYBRID)		
	IC1921	S1854-C1	I.C.		
	IC1981	AN7805F	I.C(MONO-ANA)		
	IC1982	KIA78L08BP-Y	I.C(MONO-ANA)		
	OTHERS				
	CF1101	MKT39.5MA100P	CERAMIC FILTER		
	CF1102	MKT30.9MA100P	CERAMIC TRAP		
	CF1121	TPSH6.0MB	CERAMIC FILTER		
	CF1122	TPS5.5MW	CERAMIC FILTER		
	CF1123	TPS6.5MB	CERAMIC FILTER		
	CF1124	EFCWS4504A	CERAMIC FILTER		
	CF1561	CSB503F18	CER.RESONATOR		
	CF1621	SFT5.5MA	CERAMIC FILTER		
	CF1622	SFE6.0MC	CERAMIC FILTER		
	CF1623	SFE6.5MC2	CERAMIC FILTER		
	CF1624	SFT4.5MA	CERAMIC FILTER		
	CF1625	SFE6.0MC	CERAMIC FILTER		
	CF1626	SFE6.5MC2	CERAMIC FILTER		
⚠	CP1501	ICP-N10-Y	I.C.PROTECT		
⚠	CP1901	ICP-N38-Y	I.C.PROTECT		
⚠	CP1903	ICP-N10-Y	I.C.PROTECT		
⚠	F1901	QMF51E2-3R15J4	FUSE	3.15A	
	FC1001	CEMG002-001Z	FUSE CLIP		
⚠	FR1118	QRZ0054-150M	F R	15 Ω 1/4W	J
⚠	FR1401	QRH127J-1R8M	F R	1.8 Ω 1/2W	J
⚠	FR1531	QRH127K-R47M	F R	0.47 Ω 1/2W	K
⚠	FR1676	QRZ0054-220M	F R	22 Ω 1/4W	J
⚠	FR1679	QRZ0054-220M	F R	22 Ω 1/4W	J
	J1011	CEMN083-001	PIN JACK		
	J1012	CEMN076-001	PIN JACK		
	K1921	CE42050-001Z	CORE		
	K1923	CE42050-001Z	CORE		
⚠	LF1901	CE41775-002J1	LINE FILTER		
⚠	PC1901	TLP721F(GR)	I.C(PH.COUPLER)		
	SF1101	CE41099-601	SAW FILTER		

⚠ Symbol No.	Part No.	Part Name	Description	Local
OTHERS				
⚠ TH1901	CEKP002-003	W.P.THERMISTOR		
TU1001	CEEM564-B01	TUNER		
⚠ VA1901	ERZ-C10VK621A	VARISTOR		
X1301	CE41092-00AJ2	CRYSTAL		
X1302	CE40749-001J2	CRYSTAL		
X1701	CE41887-001J2	CRYSTAL		

CRT SOCKET PW BOARD ASS'Y (SMZ-3002A-H2)

⚠ Symbol No.	Part No.	Part Name	Description	Local
RESISTOR				
R3343-45	QRG029J-123A	OM R	12kΩ 2W J	
CAPACITOR				
C3336	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J	
C3338	QFZ0097-223M	MM CAP.	0.022μF	
COIL				
L3331	CELP055-151Z	PEAKING COIL	150μH	
DIODE				
D3331	1SS133-T2	SI.DIODE		
TRANSISTOR				
Q3331-33	2SC2371(MLK)	SI.TRANSISTOR		
Q3334	2SA933AS(QR)-T	SI TRANSISTOR		
OTHERS				
⚠ SK3001	CE42535-001J1	CRT SOCKET		

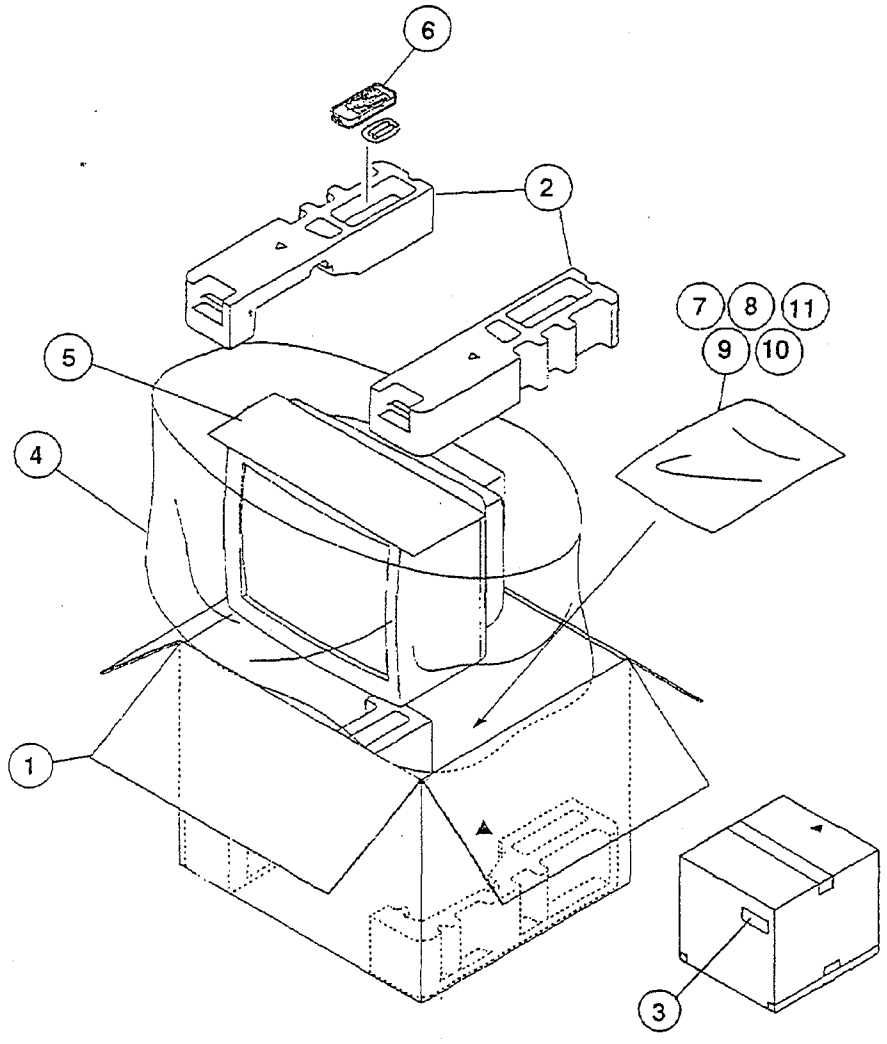
CONTROL PW BOARD ASS'Y (SMZ-8001A-H2)

⚠ Symbol No.	Part No.	Part Name	Description	Local
D I O D E				
D8741-44	1SS133-T2	SI.DIODE		
D8747-48	MTZJ5.6(A)-T2	ZENER DIODE		
I C				
IC8741	HC-337M	IFR DETECT UNIT		
O T H E R S				
J8013	CEMN084-001	PIN JACK		
S8741	QSP1A11-C18Z	PUSH SWITCH	VOL(+)	
S8742	QSP1A11-C18Z	PUSH SWITCH	VOL(-)	
S8743	QSP1A11-C18Z	PUSH SWITCH	CH△(UP)	
S8744	QSP1A11-C18Z	PUSH SWITCH	CH▽(DOWN)	
S8745	QSP1A11-C18Z	PUSH SWITCH	CH PRESET	
⚠ S8901	QSP2J21-C02	PUSH SWITCH	POWER SW	

LED PW BOARD ASS'Y (SMZ8L001A-H2)

⚠ Symbol No.	Part No.	Part Name	Description	Local
D I O D E				
D8711	LN21RPH(O)-TC1	L.E.D.(RED)		
D8712	LN81OPH(S)-TC1	L.E.D.(ORG)		
O T H E R S				
	CM35819-A01-H	LED HOLDER		

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	CP11400-043-H	PACKING CASE		
	2	CP11416-00B-H	CUSHION ASSY	4pcs in 1set	
	3	CM47385-00A	POS,SERIAL LABEL		
	4	CP30545-001-H	SET COVER		
	5	CP30544-001-H	TOP COVER		
	6	RM-C461-1H	REMOCON UNIT		
⚠	7	CQ40002-001-H	INST BOOK		
	8	CQ40003-001-H	DIGET MUNUAL		
	9	QPGA025-03505H	POLY BAG		
	10	CQ40030-001-H	INSTRUCT.SHEET		
	11	CEMK002-001	ADAPTOR PLUG	(AV-25MEX-A)	

AV-25MEX AV-25MEX(-A) STANDARD CIRCUIT DIAGRAM

■NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal :PAL Color bar signal
(2)Setting positions of each knob/button and variable resistor :Original setting position when shipped
(3)Internal resistance of tester :DC 20kΩ/V
(4)Oscilloscope sweeping time :H ⇒20μS/div
:V ⇒5mS/div
:Others ⇒ Sweeping time is specified
(5)Voltage values :All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL[EXAMPLE]

•In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

•Resistance value
No unit :[Ω]
K :[KΩ]
M :[MΩ]

•Rated allowable power
No indication :1/6[W]
Others :As specified

•Type
No indication :Carbon resistor
OMR :Oxide metal film resistor
MFR :Metal film resistor
MPR :Metal plate resistor
UNFR :Uninflammable resistor
FR :Fusible resistor

* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

•Capacitance value
1or higher :[pF]
less than 1 :[μF]

•Withstand voltage
No indication :DC50[V]
Others :DC withstand voltage[V]
AC indicated :AC withstand voltage[V]

* Electrolytic Capacitors
47/50[Example]:Capacitance value[μF]/withstand voltage[V]

•Type
No indication :Ceramic capacitor
MY :Mylar capacitor
MM :Metalized mylar capacitor
PP :Polypropylene capacitor
MPP :Metalized polypropylene capacitor
MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor
TAN :Tantalum capacitor

(3)Coils

No unit :[μH]
Others :As specified

(4)Power Supply

:B1(114V)
:B2(12V)
:8V
:5V

* Respective voltage values are indicated.

(5)Test Point

: Test point
: Only test point display

(6)Connecting method

: Connector
: Wrapping or soldering
: Receptacle

(7)Ground symbol

: LIVE side ground
: ISOLATED(NEUTRAL) side ground
: EARTH ground
: DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND *simultaneously. If the* above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

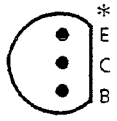
(2) Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a *measuring apparatus (oscilloscope,* etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◇ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

June 1995 No.50972

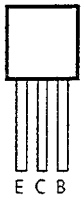
SEMICONDUCTOR SHAPES (* = Bottom view)

TRANSISTORS

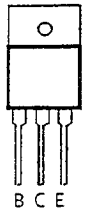


2SA949(Y)C1
2SA966(0Y)-T

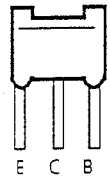
2SA562TM(Y)
2SA673(C)
2SC2655(Y)
2SC1360
2SC1959
2SC1906
2SC2482(C1)
2SB774(RS)
2SC4722(NP)
2SC1815(YG)



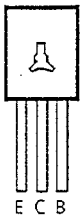
2SA933AS(QR)
2SA933S(QR)
2SC1740S(QR)
2SC2785(JH)
DTC124ESA-T



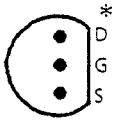
2SD1554-C1
2SD1878-YD



2SC4502

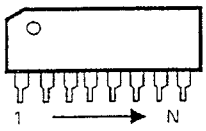


2SC2371(MLK)
2SC3271(NP)

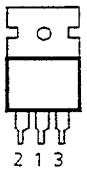


2SK301(P)

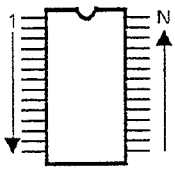
ICs



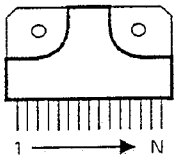
LA7016



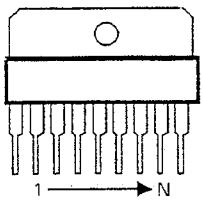
S1854-C1



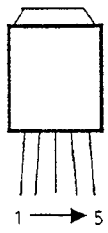
TA8725N-J
TA8601BNV
MN152121JGM2
CXA1124AS
TA8725AN
MN1872013JGU3
TA8801AN
MN1873237JKH6
M52343SP
M37102M8-C41SP



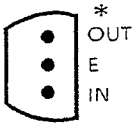
LA7838
UPC1488H
LA7837



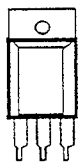
AN5265



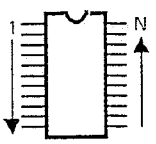
L78LR05E-MA



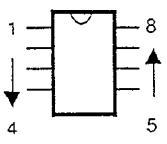
KIA78L08BP



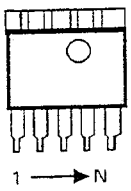
AN78N12
AN78M05



U3660M-B
M52325P
BU4066BC

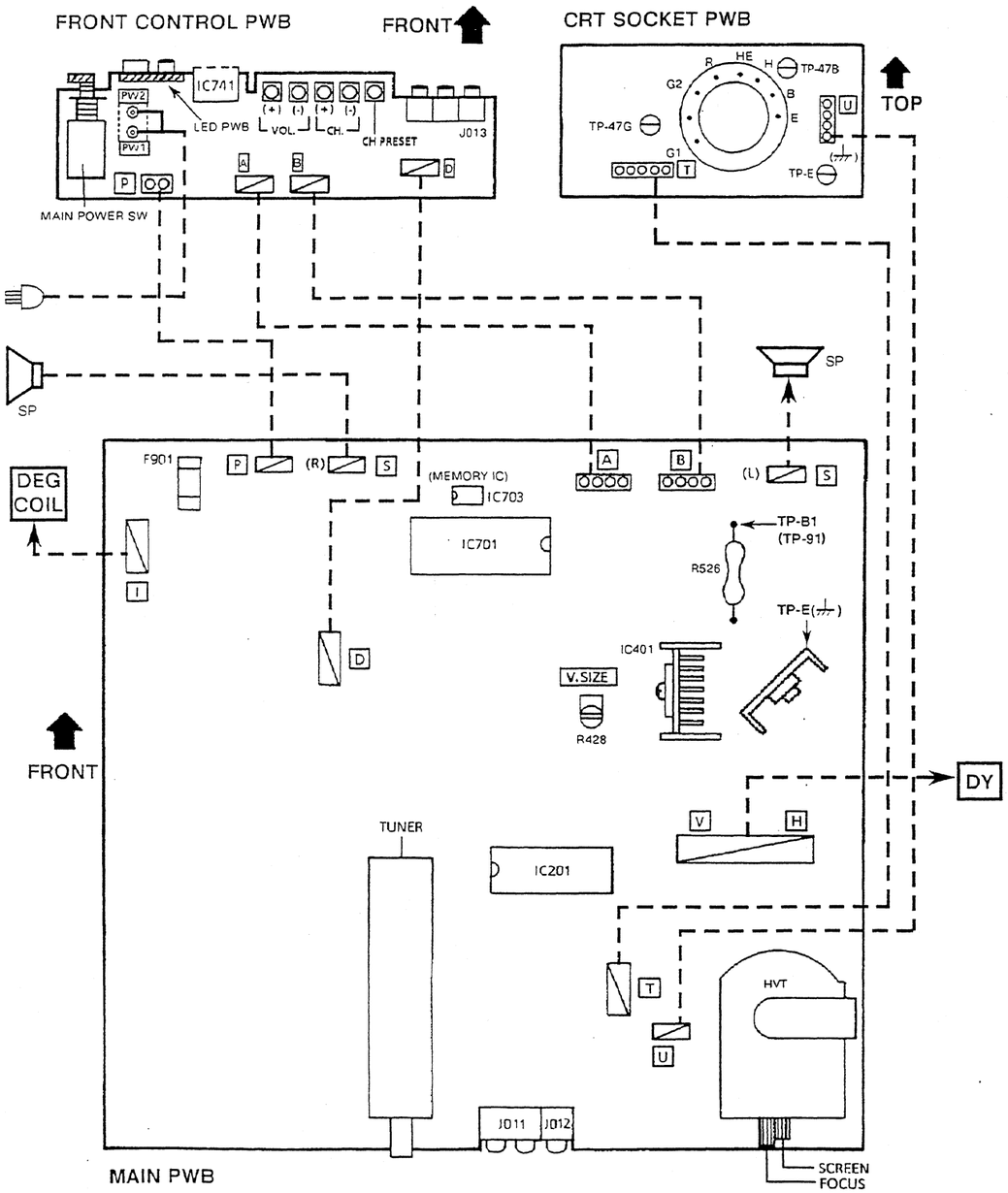


ST93C46AB1
AT93C56-10PC
XL24C04P-21ME



STR-S6707

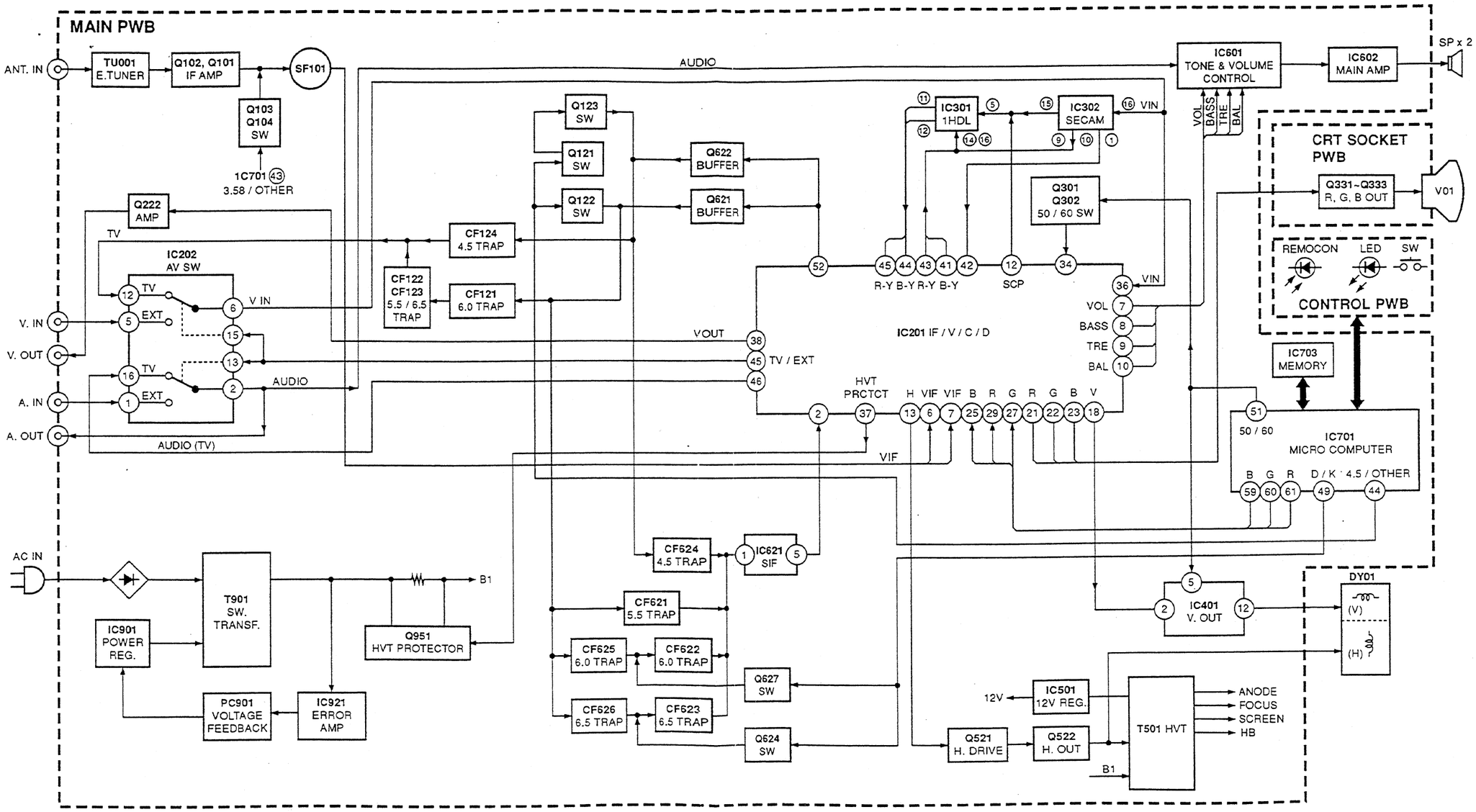
MAIN PARTS LOCATION AND ALIGNMENTS LOCATION



WIRING LIST

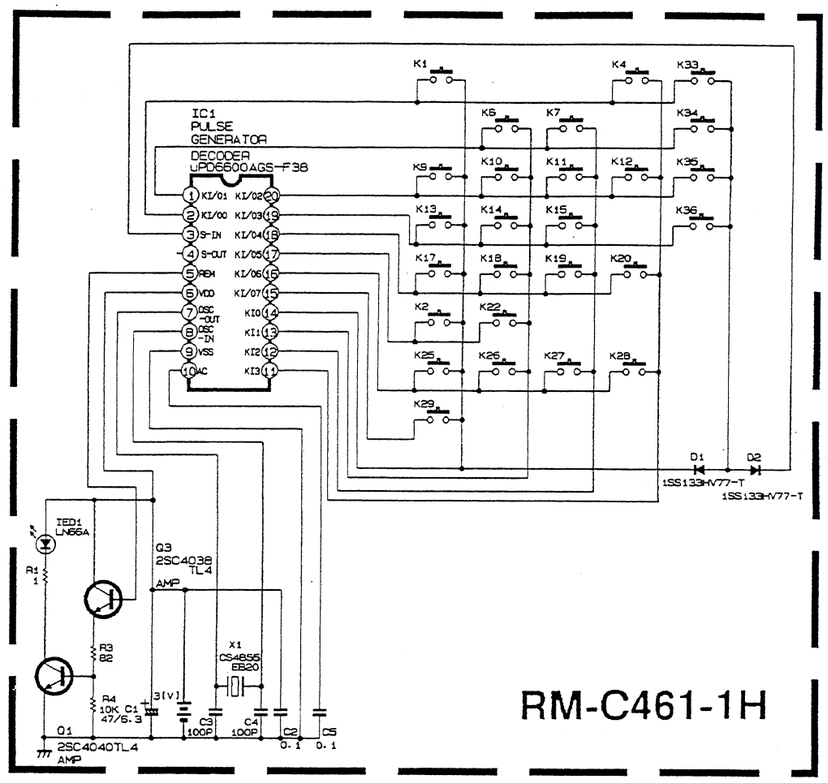
P.W.BOARD or PART NAME	CONNECTOR NAME	WIRING	CONNECTOR NAME	P.W.BOARD or PART NAME
MAIN PWB ASS'Y	T	⟷	T	CRT SOCKET PWB ASS'Y
MAIN PWB ASS'Y	U	⟷	U	CRT SOCKET PWB ASS'Y
MAIN PWB ASS'Y	I	⟷	WIRE	DEG. COIL
MAIN PWB ASS'Y	H	⟷	WIRE	DEF. YOKE
MAIN PWB ASS'Y	V	⟷	WIRE	DEF. YOKE
MAIN PWB ASS'Y	S	⟷	WIRE	SPEAKER 01, 02
MAIN PWB ASS'Y	P	⟷	WIRE	CONTROL PWB ASS'Y
CONTROL PWB ASS'Y	PW1 / PW2	⟷	WIRE	POWER CORD
MAIN PWB ASS'Y	A	⟷	A	CONTROL PWB ASS'Y
MAIN PWB ASS'Y	B	⟷	B	CONTROL PWB ASS'Y
CRT SOCKET PWB ASS'Y	CRT EARTH	⟷	EARTH WIRE	CRT
CONTROL PWB ASS'Y	CN007	⟷	CN007	LED PWB ASS'Y

BLOCK DIAGRAM



CIRCUIT DIAGRAMS AND PWB PATTERNS

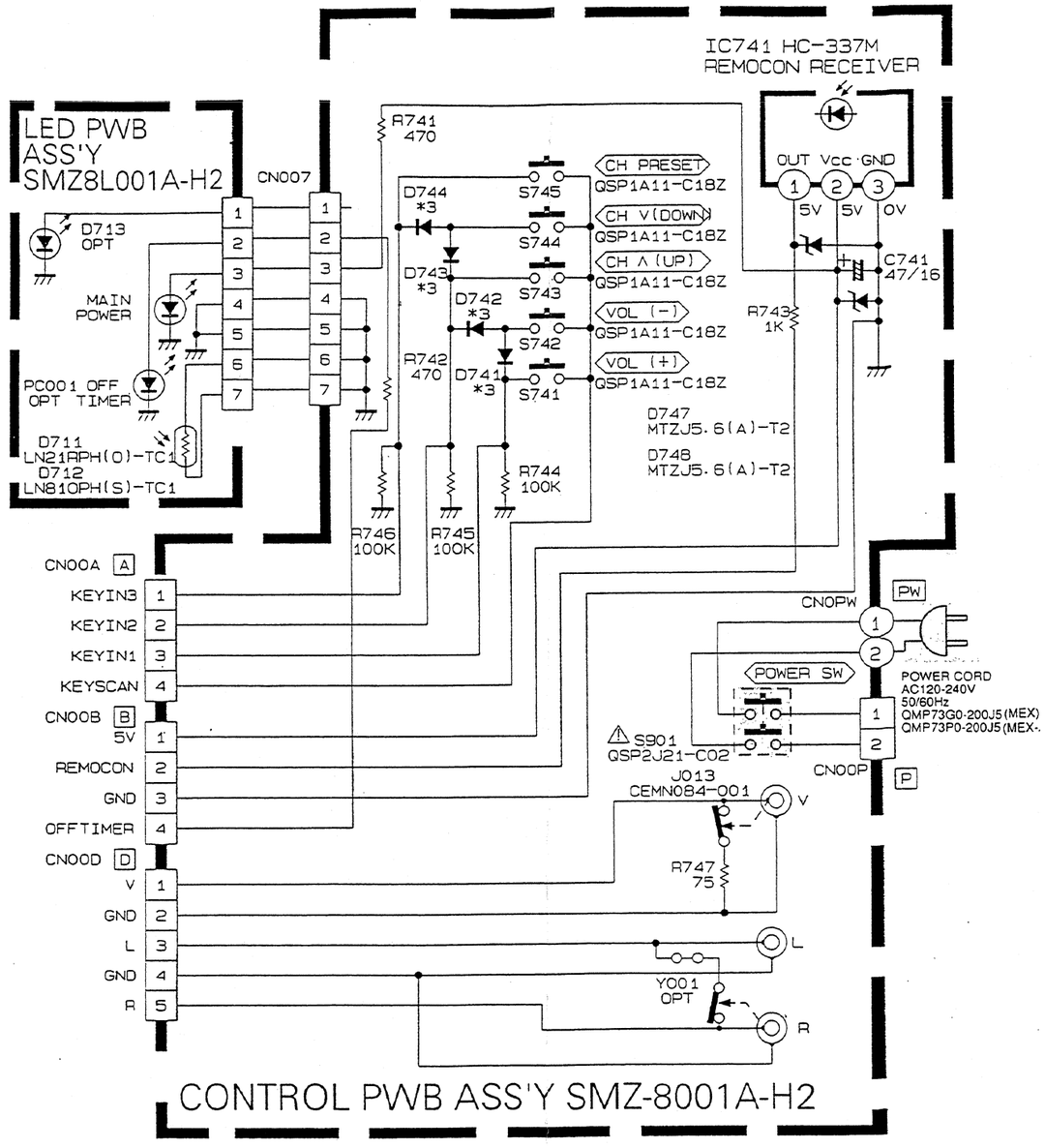
REMOTE CONTROL TRANSMITTER CIRCUIT DIAGRAM [RM-C461-1H]



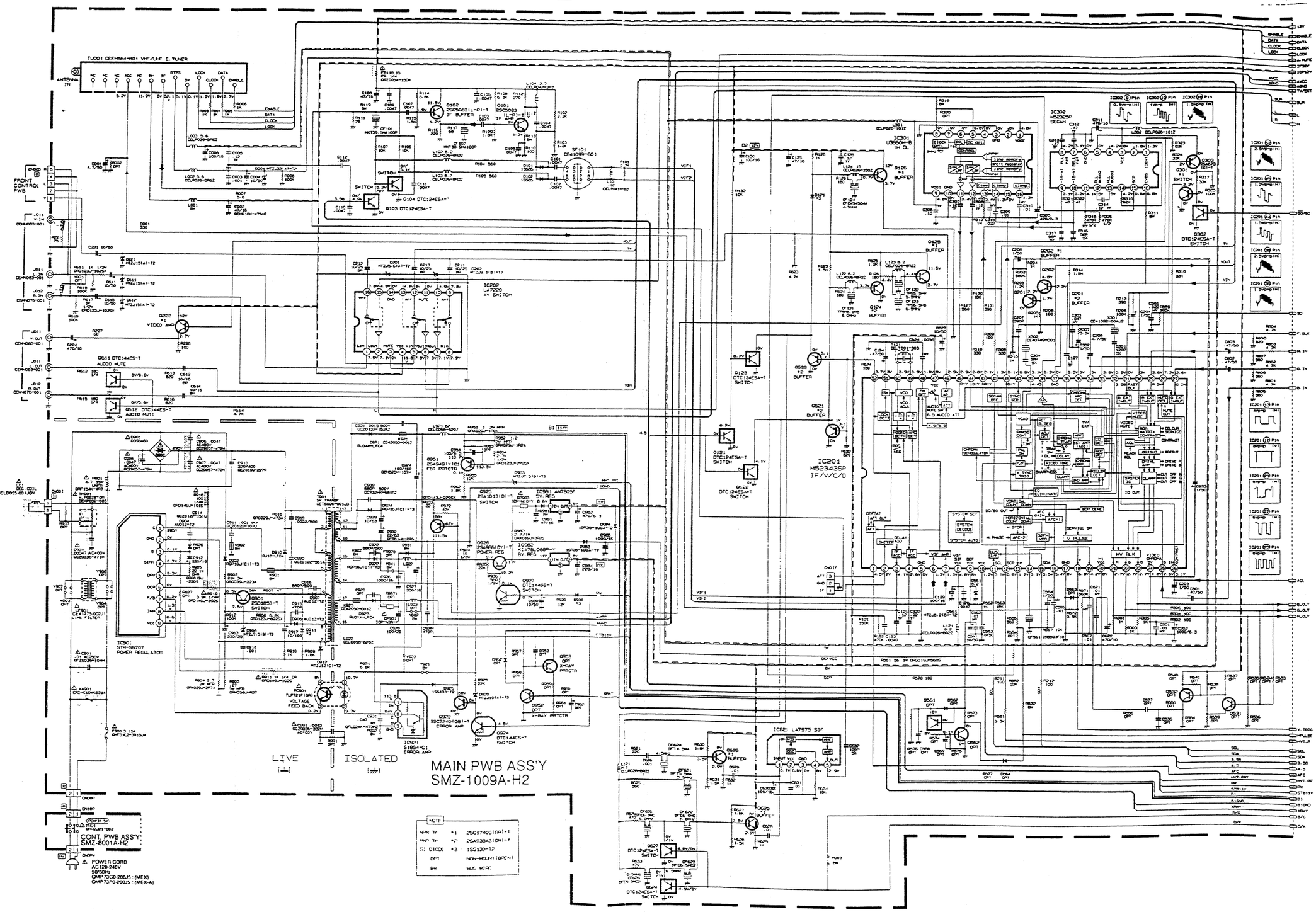
KEY No.	FUNCTION	KEY No.	FUNCTION	KEY No.	FUNCTION	KEY No.	FUNCTION
1	POWER	10	2	19	7	28	PICTURE MODE
2		11	1	20	OFF TIMER	29	MUTE
3		12	DISPLAY	21	- / - -	30	
4	TV / VIDEO	13	6	22	0	31	
5		14	5	23		32	
6	SOUND SYSTEM	15	4	24		33	VOLUME +
7	COLOUR SYSTEM	16		25	+ PICTURE/SOUND	34	VOLUME -
8		17	9	26	PICTURE/SOUND	35	CHANNEL +
9	3	18	8	27	- PICTURE/SOUND	36	CHANNEL -

LED / CONTROL PWB CIRCUIT DIAGRAM

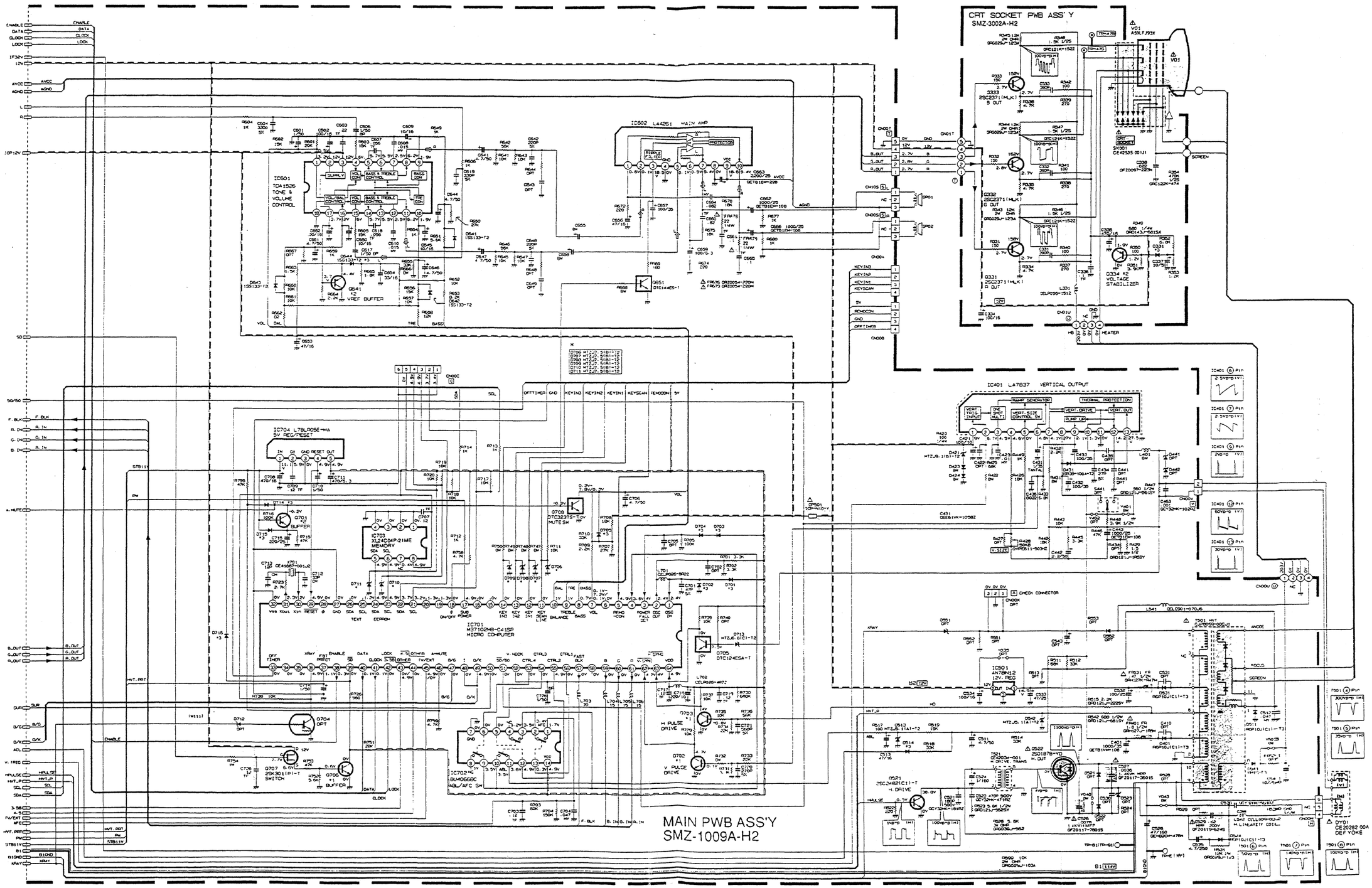
Refer to the following PWB pattern. : CONTROL PWB PATTERN Page 2-15, LED PWB PATTERN Page 2-16.



MAIN PWB, CRT SOCKET PWB CIRCUIT DIAGRAMS



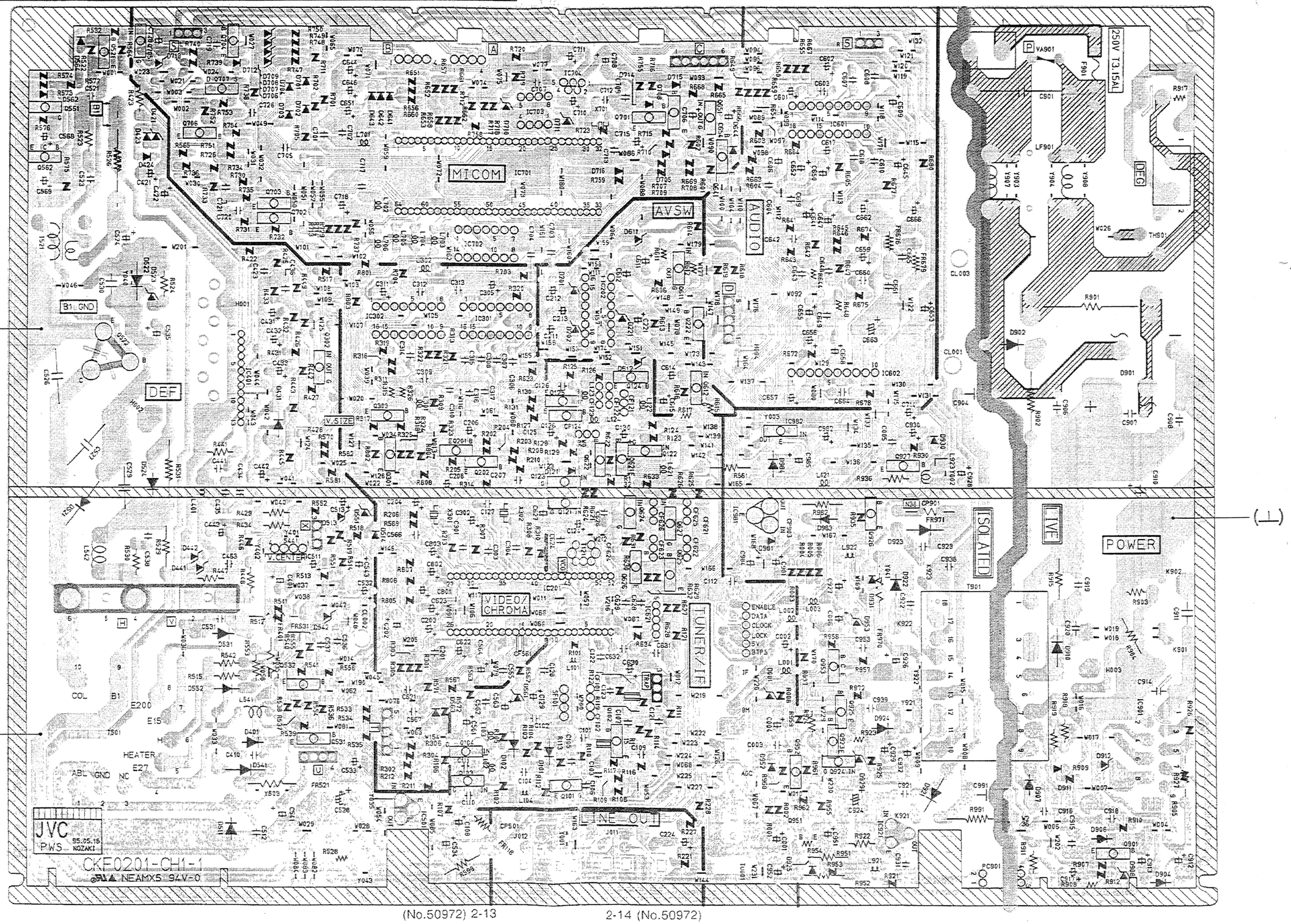
Refer to the following PWB pattern. : MAIN PWB, CRT SOCKET PWB PATTERN Page 2-13~2-15.



MAIN PWB PATTERN [SMZ-1009A-H2]

FRONT

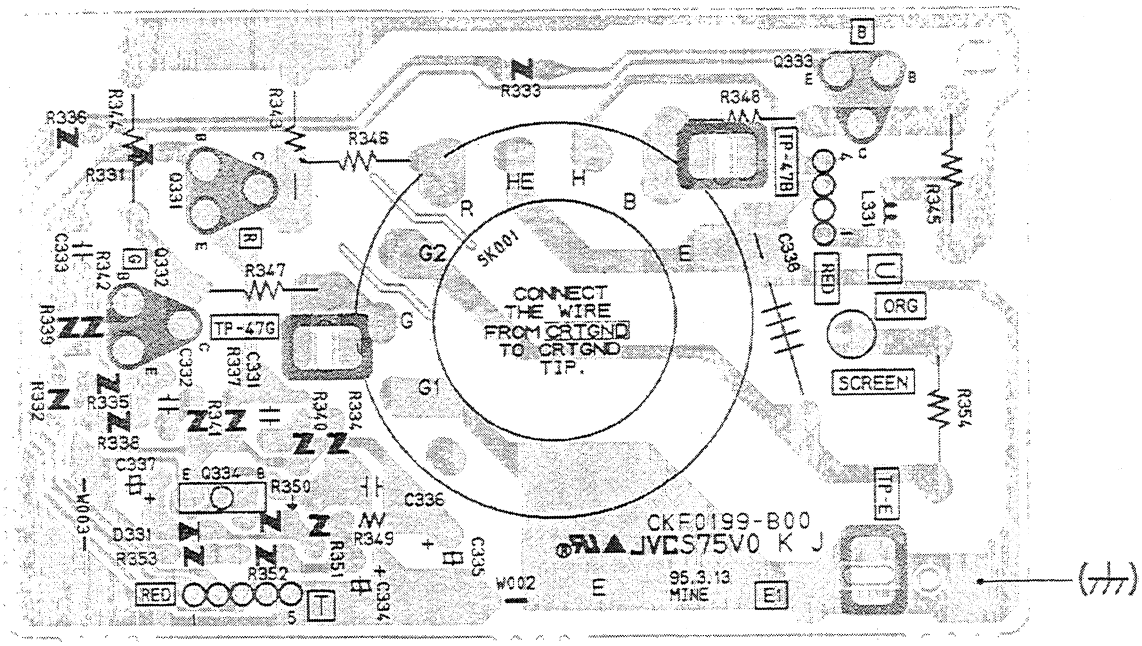
(Magnification Rate 100%)



CRT SOCKET PWB PATTERN [SMZ-3002A-H2]

(Magnification Rate 130%)

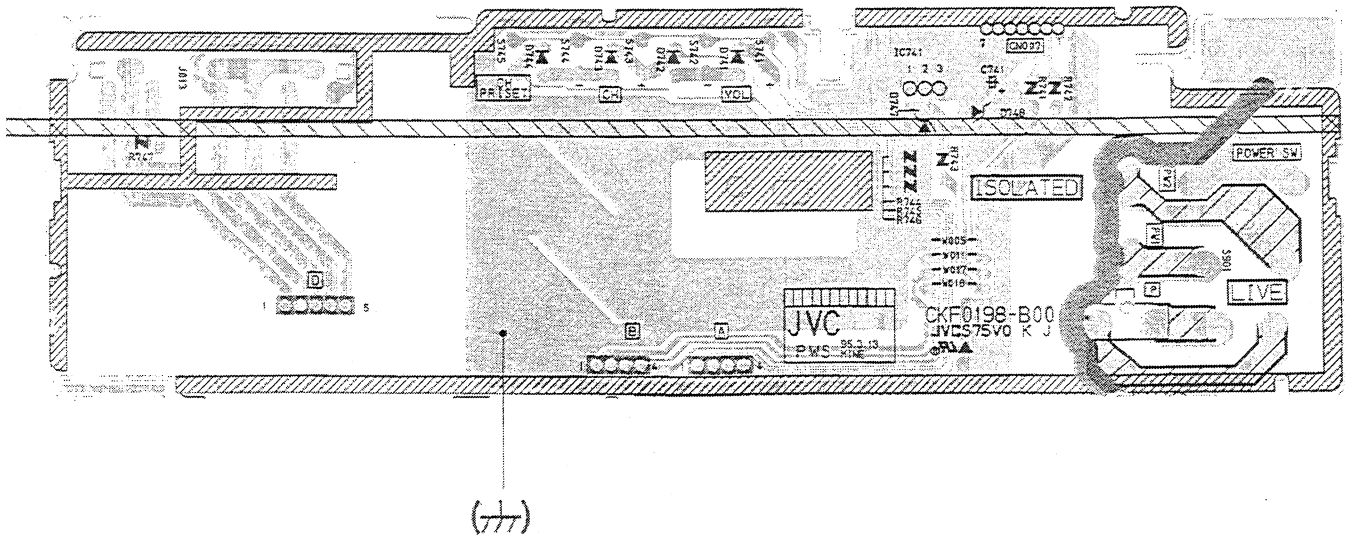
TOP



CONTROL PWB PATTERN [SMZ-8001A-H2]

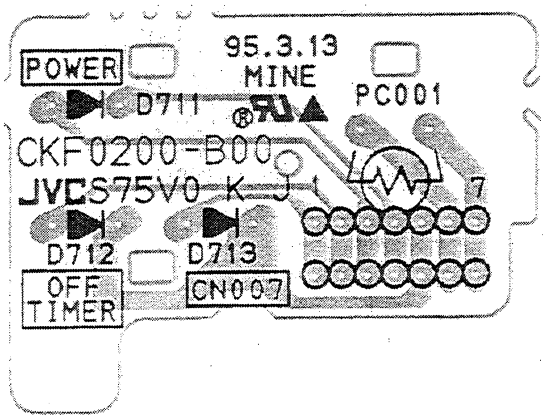
(Magnification Rate 80%)

FRONT



LED PWB PATTERN [SMZ8L001A-H2]

(Magnification Rate 180%)



TOP